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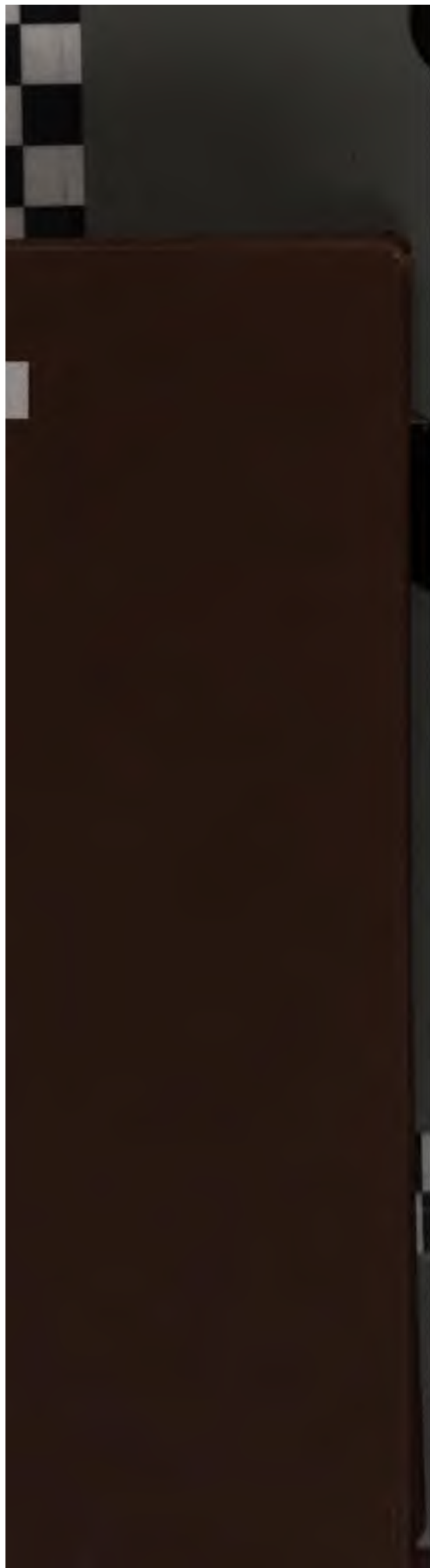
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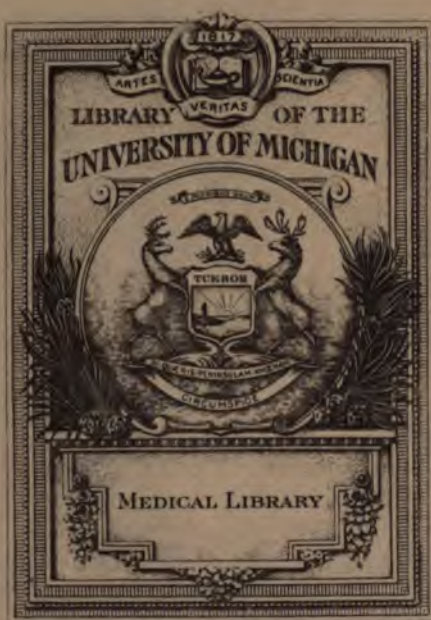
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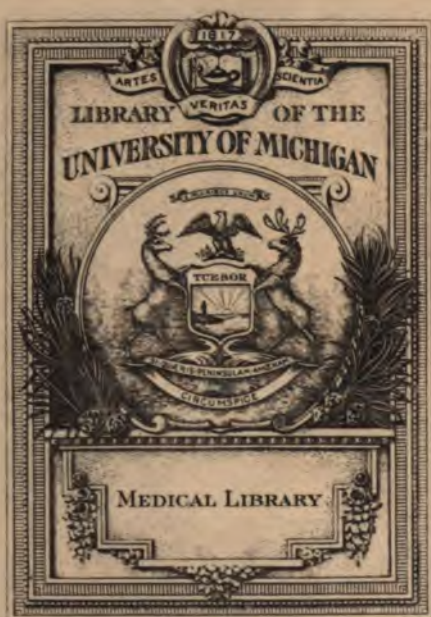




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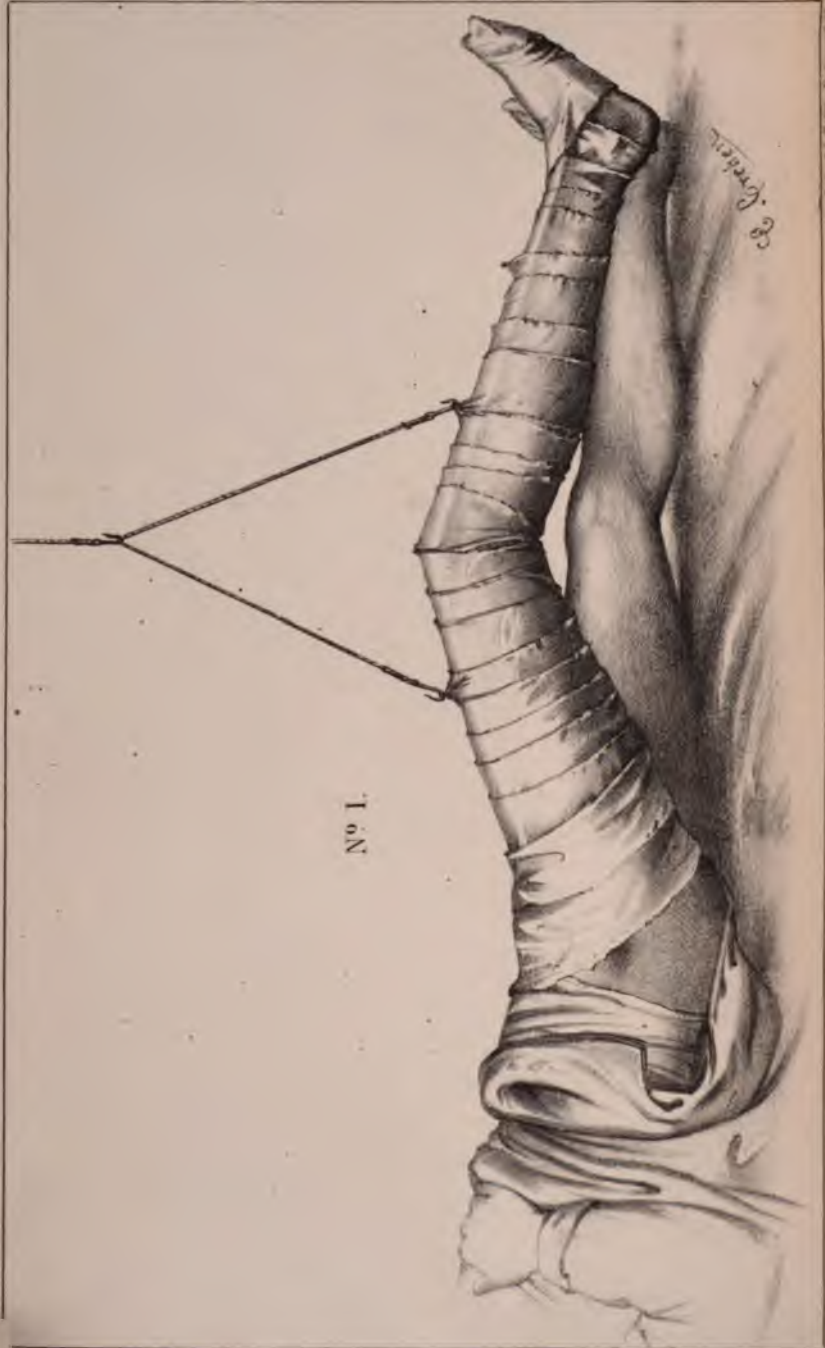
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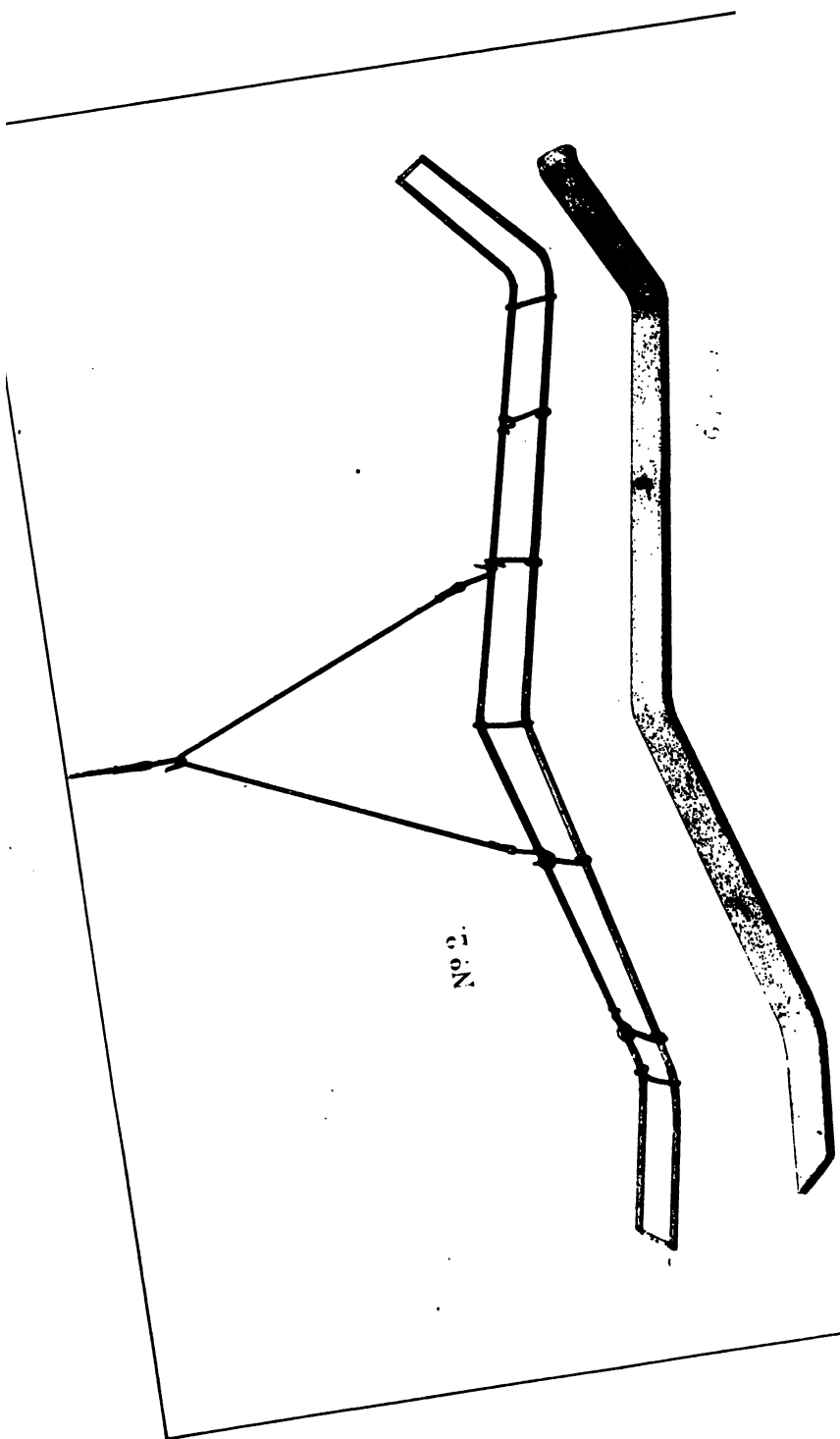
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Nº 1.

E. G. Knecht





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ART. I.—*A New Instrument for the Treatment of Fractures of the Lower Extremity.* Clinical Lecture, by N. R. SMITH, M. D., Professor of Surgery, University of Maryland, Dec. 21st, 1859.

GENTLEMEN,—I show you the first “Anterior Splint,” which, to my knowledge, was ever used. You are all acquainted with the apparatus for fractures of the lower extremity which was used by me formerly. It has the principle of suspension, but the limb rests upon a series of slings attached to the lateral pieces of the apparatus. In showing the application of the apparatus, I had long demonstrated that each turn of the roller, securing the limb to the apparatus, co-operated with the slings to equalize the pressure upon the limb. For a long time, too, I had thought that the bandage alone would be less complicated and sufficient, provided a support above could be given to it.

On the 28th day of Sept., 1854, I put this idea to the test in practice. Edward English had been under treatment for compound comminuted fracture of both bones of the leg, in a neighboring hospital, for many months. The bones did not unite, and the soft parts sloughed. Amputation was judiciously advised under the circumstances, but the patient requested to be brought to this Infirmary for treatment. I was, therefore,

doubly anxious to save the limb: I threw aside all the complicated apparatus which had been used, and proceeded to apply the splint, which I show you now. Thus the limb was first cleaned and laid upon a pillow. Four strips of adhesive plaster were then used to attach it to the splint above. One to secure the foot to the foot-piece; another to secure the lower fragment; a third to sustain the weight of the upper portion of the limb. Cords were attached to the iron eyes in the splint, and the whole was gently elevated from the pillow. The splint then sustained the bandage which was to assist the adhesive straps, and equalize the pressure. The bandage was not applied in a continuous roller. One secured the foot and lower fragment; a second supported the superior portion of the leg, and a third, which I call the independent bandage, equalized the pressure and sustained the dressings around the fracture.

The moment the patient found himself at liberty; that the limb was obedient to all the motions of the body; that he could turn and help himself, the relief was very great. Resting upon these bandages as slings—a perfect support suited to the form of the limb—it reposes more easily than if sunken into the softest eiderdown cushion. The dressing did not impede the discharge of pus and other subcutaneous infiltrations into the limb; but, on the contrary, promoted it by the evenness of the concentric pressure, and by the inclination of the posture. In three days it had thus been drained of all the retained fluids, and the leg had so improved that, after removing the independent bandage, the openings were enlarged and fragments of the tibia were removed. The man now steadily improved, till union having been effected, the use of the member was restored, and he has since been frequently in my office quite well.

Some time after this I happened to be in a neighboring village, and was requested to be present at an amputation, the arrangements for which were completed. The patient had sustained a compound comminuted fracture of the leg. The injury to the soft parts was very extensive. The physicians requested my opinion. According to the rules of surgery, the

amputation was justifiable; but, at my suggestion, they were glad to try the "Anterior Splint." We repaired to a joiner's shop and readily sawed it out. Its application proved successful in this case also, which, I am confident, could have been saved by no other instrument.

Since first used I have treated with it every form of fracture of the lower extremity, that of the cervix femoris, of the shaft of that bone at almost every point, and of the tibia and fibula, simple and compound, and with more success than with any other instrument. I twice employed it with the happiest results after resection of the false joint in un-united fracture of the femur. I have also used it in the treatment of compound dislocations of the ankle joint, and found it far more available than any other means of support.

The case before you to-day shows the improvements which have been made in its construction. (See second PLATE.) It is of wire. It was made by Fowler of this city, but could be easily made by any surgeon who has the wire and a pair of pincers. It can therefore be made of iron or wood—one of which materials is always convenient.

I am frequently asked, where is the extension and counter-extension in fractures of the thigh? In the case before you, observe the obliquity of the cord—this is the extension; a constant traction from the body. And when this principle of suspension is used, there are but two circumstances which demand counter-extension, viz: when the body of the patient is kept in too erect a position—or when, from adynamia, there is a tendency to slip down in the bed; what is termed by surgeons the inertia of the body. The first is easily obviated by making the position more supine; the second, by elevating the foot of the bed—thereby, at the same time, rendering the patient a service by supplying the brain with more blood, according to the laws of gravity. In this simple way I overcome both these difficulties.

To me it appears that this instrument has many advantages. To appreciate them fully they should be considered with reference to the two classes of injuries. Those

of the simple fracture of the bones of the lower extremity, and those where the fracture is compound or comminuted; that is, where there is contusion, laceration or sloughing of the surrounding soft parts. In these latter the advantages of the instrument are peculiar and manifold. But first, of simple fracture of any of the bones of the lower extremity. It offers in the first stage every advantage presented by any other instrument, to wit, the principle of suspension—extension—a moulded and easy repose for the limb—with a security derived from its concentric pressure that, without any complication of apparatus, the fragments of the bone are in apposition. This concentric pressure of the bandage is caused by the weight of the limb itself, and obviates all tendency to lateral displacement. The limb lies at rest and secure, while the other lower extremity and the remainder of the body is obedient to the will and comfort of the patient. These advantages can be secured only by the principle of suspension; but the peculiarities of the anterior splint are the easiness and perfect adaptation of the support. In simple fracture, (of which we are now treating,) after the first few days, when the shock of the accident and the first efforts of nature for its repair have been mollified in part, the limb may be placed in the starch bandage, and the patient be allowed to move upon crutches, and, in hospital practice, be classed with the out-patients. It is to its use in extensive injuries of the soft parts, however, and all fractures of the femur, to which I would especially invite your attention. Each especial portion of the limb has its own support as intended, and as if created by nature. The sole of the foot, supported by the adhesive strap and the bandage, rests upon the foot-piece. (See 1st PLATE.) The other bandages, properly applied, support the remainder of the limb. The independent bandage is intended for the situation of the injury—which can thus be dressed as often as needful without other disturbance than the removal of the saturated dressings.

Its availability in every day practice is not the least of its advantages. The country practitioner or the military surgeon, acquainted with its use, would have to wait for or transport no

complicated apparatus. A saw and a piece of board, or wire, about one-third of an inch in diameter, is all that is needful in its manufacture.

(To be continued.)

ART. II.—*Case of Extra Uterine Fœtation*. Reported by
GEO. WM. SEMPLE, M. D., Hampton, Virginia.

I send for insertion in the Journal, the report of a case of some interest, and Dr. Harrel's account of the autopsy. A preparation of a fœtus and its envelopes taken by him from the peritoneal cavity is also sent for your inspection.

On Sunday, the 13th of March, I was called to see, in consultation with Dr. Harrel, who had visited and prescribed morph. sulph. gr. ss., Eliza, a robust mulatto woman, 26 years old, the mother of two children, who then supposed herself to be more than two months advanced in a third pregnancy. One week before, she had been relieved of symptoms of threatened abortion by a full dose of opium. The abortive effects were thought by her to be the result of pressure on the abdomen in bending over a loom, and some soreness in the hypogastric region had continued up to the present attack, when she presented the following symptoms: intense anxiety, restlessness and thirst, cold surface, pulse feeble and so frequent as not to be counted, violent general abdominal pain and excessive tenderness over the whole abdominal surface, some tumefaction and indistinct fluctuation in the hypogastric region, almost constant tormina and tenesmus and frequent uterine efforts attended with increased pain. Retroversion of the uterus was suspected, but on examination by the vagina and rectum, the uterus was found *in situ* and normal for the period of gestation.* The diagnosis made, was metritis

* There being a constant stillicidium of urine, the catheter was introduced, but the bladder was found empty.

with peritonitis, and hydrar. chl. mit.; opii. aa grs. ij. every 4 hours were ordered, and a large blister applied over the abdominal surface below the umbilicus. 14th. The symptoms much less threatening; surface warm, pulse developed only 96; patient has slept several hours, but no tendency to coma; pain and tenderness of the abdomen greatly abated; no tormina or tenesmus since the second dose of calomel and opium, or uterine efforts or pain since the expulsion of a pyriform mass about $2\frac{1}{2}$ inches long, and 2 inches thick; about one-third of the length and thickness having been lost, shows it to be hollow and lined with a serous membrane—in short, a false conception—effusion in the abdominal cavity has increased. Calomel and opium continued and large emollient poultice applied to the abdomen. 15th. Dr. H. visited the patient alone, and finding the symptoms unchanged, continued the treatment. 16th. Several large bilious evacuations with which were expelled some 15 or 20 large lumbrici have occurred, and occasionally in the intervals between the evacuations, there have occurred attacks of violent tormina and tenesmus which have only ceased on the expulsion of a lumbricus. The patient seems more comfortable and desires food. The effusion has increased—other symptoms unchanged, except that the opium has not been regularly administered on account of some tendency to coma. Agreeing that the presence of a large number of lumbrici might have caused this attack, compound extract of spigelia, to be followed in 3 hours by a full dose of oil of turpentine and castor oil with a few drops of oil wormseed was ordered, and we directed the calomel and opium to be continued after the operation of the purgative had ceased; diet, chicken broth. 17th. Patient's general appearance and symptoms much the same. Has taken two doses of cal. and opium since the purgative effect of medicines ceased at about 8 last evening. Four evacuations were had, consisting almost entirely of large lumbrici. Ordered a repetition of the medicines and continuance of poultice and diet, with the addition of milk punch, which she asked for. 18th. Patient's general symptoms and appearance somewhat improved; she expresses the hope of recovery, and enjoys the broth and

punch—pulse 88. Medicine purged 3 times—4 lumbrici expelled at the first evacuation—none with the others. As the last evacuations contained no worms, the purgative anthelmintics were not pushed. Other treatment was continued, only the intervals of the administration of opium to be regulated by the discretion of her intelligent master. 19th. The symptoms continued much the same, except that there is greatly increased effusion. The opium has been well borne once in 6 hours. There are no symptoms of ptyalism. 20th. The Patient was seized in the night with violent lancinating pains, shooting in every direction through the abdomen; her pulse is now feeble and thready, and scarcely can be counted; skin cold and clammy; countenance anxious, exceedingly restless; the patient expects and desires death to terminate her sufferings. Ordered opium to be continued in 3 gr. doses, and milk punch to be given as much as she could be induced to swallow. 21st. Symptoms continue, same treatment to be continued. 22d. Died at 4 A. M. Ptyalism was not induced, and no coma or disturbance of the mental faculties occurred. In consequence of the great distance of my residence from the patient, all our visits were made about mid-day. At my request the master allowed an autopsy, which Dr. Harrel conducted and reports as follows:

Notes of Autopsy, by Dr. Harrel.

I first make an incision extending from the ensiform cartilage to the symphysis pubis, followed by two others extending from the umbilicus to the crests of the ileum. The quantity of serum in the peritoneal sac is immense, this having escaped exposes a large accumulation in the false pelvis and the cavity adjacent of what appears to be disintegrated blood, consisting of serum with an intimate admixture of broken down red corpuscles, the whole interspersed with large, loose, porous, irregular flabby clots. Having removed the greater part of this by dipping, I was enabled to obtain a tolerable view of the most important internal organs. I detect several fibrous bands con-

necting the peritoneal surfaces. The visceral peritoneum is in a state of gangrene, especially that enveloping the stomach and depending from it, of a light, yellow color, presenting the appearance of old bacon rind about half chewed, is nearly diffluent, can scarcely sustain its own weight upon a finger thrust under it; the bowels are much distended with gases.

Having taking this general imperfect survey, I think it best to confine my special researches to the pelvic region, for to that point the symptoms appeared especially to tend.

The first object that attracts my attention is a fluctuating cordiform tumor, lying immediately in front of the womb, and pressing upon the urinary bladder, the large extremity looking downward and forward with two transparent spots, three lines in diameter and four lines apart, on the most depending part, and presenting an appearance analogous to that produced by ulcers which had perforated all the investments of the tumor except the internal thin transparent membrane. I now explore carefully its connections. I find it continuous with and appearing to form part of that portion of the peritoneum which depends in a loose fold from the anterior surface of the stomach. To avoid mistake, I trace out carefully the urinary bladder, whose superior fundus I find indented by the superincumbent weight. I next proceed to trace out the uterus, carrying both hand and eye entirely around its fundus, body and cervix, introducing at the same time one or two fingers of the other hand into vagina. I next trace out, in the same manner, the Fallopian tubes to their fimbriated extremities, as also the ovaria. I find all right and natural with the womb and its appendages, except slight enlargement of the womb, swelling of its labia, and patency of its os, so as to admit the end of the finger. Turning my attention a second time to the tumor, I find it adherent to the superior surface and extremity of the right fimbria. I sever the tumor from its connections. I next puncture with the point of the scalpel, one of the transparent spots already designated, when out gushed the liquor amnii, and there lies the two months' foetus. I should pursue the autopsy further, but the late hour, the waiting coffin, and

the impatience for interment, admonish me to desist. The specimen I have now in my possession.

ART. III.—*An Appeal to the Editors of the Virginia Medical Journal.* By X.

MY DEAR DOCTORS: I am one of your most precious subscribers; for, independently of my annual punctuality, which has never awaited the *Notice to Subscribers*, you have in me a devoted and indefatigable reader. Not only do I read, with unparalleled patience, all you print, but I often explain, commend, justify and defend you. Now, as in my neighborhood, there are some narrow-minded fellows who make inuendoes, and affect to criticise what they are incapable of understanding, I find my assumed task becoming burthensome, so much so that, with the best disposition in the world, I despair of accomplishing it hereafter, unless you look to it. The doctors down here hold me responsible for every word in your Journal, and, as they know I will not budge an inch on this point, they throw in my teeth even your typographical errors. I have held my ground thus far, always maintaining that your work is a masterpiece. In this, I only do my duty; for your Journal is mine. I have received it from the beginning, and read and digested every number; and the fifteen volumes of the *Stethoscope*, and the combined *Journal*, are the most prominent and cherished ornaments of my library. But I feel a giving way, not of my zeal, which is indomitable, but of my means of resistance. As long as I had only to palliate such peccadilloes as articles too long or too short, to decipher some of your foggy contributions *de causis et naturis*, to interpret some lame case, to correct mangled names and erroneous dates, I acquitted myself with some success. But, for some time past, my difficulties have been greater, the attacks more numerous; and though I reply sometimes with an air of disdainful superiority, some-

times with biting irony, now with accents of vehement indignation, and again with weapons of the closest argument, I feel a secret distrust which paralyzes my efforts. In fact, my own faith wavers, and I write in frank friendship to confide my scruples to you.

It is especially your diabolical Editorials and Miscellanies that make trouble. There are pedants in our society who resent an attempt to make them smile, and only accept science on condition that it is dull. They complain that these critical articles are a monstrosity in the medical press which should be sober and dignified. You may imagine that I readily settle these carpers with the *margarita ad porcos* allusion. I hold that the scope of editorials should be illimitable. To suppress editorials would be to oppose the spirit of the age and retard the march of civilization. Editorials rule the world. Editorials are conversant with all that is loftiest in the domain of intelligence. What, then, I beg, would be a journal without editorials? Being a progressive man, I proclaim their omniscience and absolute necessity.

But there are all sorts of editorials, and if I triumph in discussing the general question, I am greatly perplexed in coming down to details. Without going back too far in the history of your offences, there is one which, according to some old fogies here, has become with you an habitual fault. This is your passion for laughing at our poor profession, and sneering at our poor science, which always come out of your hands mangled and disabled objects of pity and scandal to the Hippocratic brotherhood, and of derision to the profane. The malcontents in this part of the country think it is very strange that you are dissatisfied with a medical epoch in which flourish such men as themselves. They are willing that you should fulminate against the quacks, but would like to have you make some exceptions, which they would willingly suggest to your impartial notice.

In public, I treat these vain complaints with becoming contempt; but, between ourselves, I would avow my own scruples on this point. It does appear to me, vanity apart, that we are rather better than the pitiless authors of *Varia*, *Pharmacy gone*

mad, etc., represent. I protest instinctively against their anathemas. I am incapable of refuting them, but I won't be convinced. So when I am pressed on this point, and about that pretended letter from a practitioner in Botetourt, and the scores of maledictory articles you have launched at our poor science, I escape by saying that these *jeux d'esprit* must not be taken literally; that though hyperbolic in style, the sense is very sensible, that they are designed only to repress the impudence of pseudo-scientists and innovators. But my weak-minded brethren can't make these distinctions. I advise you, therefore, to connect occasionally, with this denunciation of innovations and general scepticism, announcements of sublime discoveries, or some original idea that shall vindicate the honor of the century and sustain the credit of cotemporaneous medicine. The doctors down this way would thank you for it, and you would oblige me personally by so doing. My neighbors do not doubt but you have in your power every month to proclaim something of the sort, but that you persist in showing only the dark side, and in handing over your brethren to the tender mercies of that atrabilious writer on *Pharmacy gone mad*, and the like. Such are the murmurs with which I am continually assailed, my dear doctors, and of which I would fain be delivered.

But this is not all—here is a more serious grievance! They accuse you, not only of calumniating our science, but, still worse, our profession. They say that you paint the professional manners and customs of the day in the blackest colors, and take a cruel pleasure in exposing our sores and parading them before the public, which is the part of an untrue comrade and faithless brother. When I was last at Petersburg, Thweatt showed me how the French *Archives* had translated that article by that infernal *Invalid M. D.*, representing our metropolitan brethren as subdivided into *Probangers* and *Inhalers*, and I noted that the Frenchman did not tone down the invective. A month ago, you seemed to denounce the entire profession as a prostituted Babylon, given over to abomination and desolation; a set of specialists and industrialists, womb-burners and

pox doctors. Timon himself could not have done worse. Are we then fallen so low? Is all justice, honor, and learning extinct among us? Has Astræa returned to the skies with her virtues, her daughters? I, who have studied rhetoric, and appreciate the privileges of the *facit indignatio versum*, am not deceived by hyperbole. I know what allowances are to be made, and when in an editorial, conceived in the satirical style, I am told that a man is a scoundrel, I merely infer that he is not to be held up as a model of virtue. But in our neighborhood there are donkeys, destitute of literary perception, who see only with the bodily eyes, and stupidly imagine that your strictures apply to the whole profession, whereas you evidently design to stigmatise only its vices and follies. It is true you don't write for fools, but you are wrong; it is proper to have regard to fools in this world; for being very numerous, *stultorum immersus numerus*, they are very powerful. Endeavor then, while castigating the impudence of quackery, the baseness of rival cliques, and the ignorance and sloth that retard progress, to inform your country readers that you speak in general terms, and that you heighten the colors of your picture with the laudable intention of admonishing us against evil by exhibiting its naked ugliness. You should add that if you do not oftener laud and magnify the profession, it is not because examples of virtue, of moral excellence, or of professional dignity are wanting at the present day; but because it is useless to encourage the good, while it is very necessary to intimidate the bad. With these precautions, you can continue your war on abuses, without being accused of injustice and pessimism, and you will relieve your humble servant from many assaults.

You have another mania, which is a kind of appendage to the preceding, for making fun of us on all occasions. You show an inexplicable predilection for ridiculing your brethren. I assure you this is the least pardonable of your sins. Are we not sufficiently abused in the secular press, and shall we ourselves furnish new themes to the irreverent? What need, for example, was there of revealing the true sense of the word *nerve* to our detractors? Without judging of the value of that

piece of drollery, which appeared very flat to those who do not, like me, make it a principle to approve everything in the VIRGINIA JOURNAL, its intention, in the first place, was culpable. I only repeat what is said about me; for my part, I have too much confidence in my Journal, to suspect your good faith. Besides, I naturally love raillery, provided it is good. In this connection, I would take the liberty of suggesting to you that, oftener than you imagine probably, you become profoundly tedious, when apparently meaning to be amusing. Trust to my experience on this point. If you will get rid of this little defect, I will willingly pass the sponge over the rest.

These are the principal complaints against your editorial and critical department. I repel some, some I palliate; I excuse them all. But, between ourselves, is there not some little foundation for these objections? Do you hold the critical balance with impartial hands always? I leave it to your excellent and illuminated judgment to decide. For myself, if I may express my humble personal opinions, this is what I should say, if I was asked.

In the first place, as to our science, I reply to the collaborator who makes out that we have not advanced since Hippocrates, that if the art of healing has not made all the progress we could desire, it is not for want of zeal, activity, and real knowledge on the part of the laborers; but that we must take into consideration the inherent difficulties of the enterprise, and reflect that nature, having need of deaths, will always hold in reserve, as a *sine quâ non* means, incurable diseases. If he is not satisfied with this common-place, I would add that, historically speaking, it is not true that we simply repeat what has been already said by our fathers and fathers' fathers. Undoubtedly the most general points of view in the physiological and pathological sciences were laid down at the commencement of scientific enquiry, and so will be reproduced indefinitely in the ulterior development of ages to come. But it is not in the field of pure speculative thought that we are to look for progress, but in the sphere of practical applications and the

theoretical knowledge connected with them. Now it is evident that contemporaneous medicine is vastly superior to that of the ancients, in this respect. It tends to analyze phenomena, to penetrate their visible mechanism, to ascertain the observable causes; and if it does not meet with entire success, it is still on the right road. From Hippocrates to the end of the eighteenth century, medicine was only an empirical method, very erudite, very cultivated, very good in the limits it aspired to. But, reduced to its own resources, it could hardly progress, having early attained the perfection of which it was capable. Much was added, too, in that long period. Where in Hippocrates or Galen do we find mention of calomel, quinine, iodine or vaccinia? I won't speak of surgery, for there is no room for argument there. Neither Erasistratus, nor Albucasis, nor Paré could crush a stone in my bladder, nor rectify my squint or wry-neck, nor make me insensible during an operation. In medical practice, we don't see so clearly, nor get on so fast; but we may claim that the improvements in diagnosis and anatomical knowledge are very favorable conditions for the success of therapeutical applications.

I will not presume to discuss the great question which each age considers, when Janus-like, it regards the past and the future, nor renew the *threadbare parallel between the ancients and moderns*. I only wish to communicate to you my doubts, of which indeed I am a little ashamed.

As to the profession, which you alternately ridicule and anathematize, according to the state of your digestion, I have many things to say. I don't deny that there is a vast influx of quackery, meanness and turpitudes of all sorts in our little world, but I am not sure, Dr. to the contrary, there was not as much in former times. Our ancestors were probably not better than we, and we are as good as they. Men change but little; there are always a great many good, physicians and others, let us honor them; there are always very many bad, let us detest them. You can comment in the vein of satire or of eulogy, for there are facts for both theses, but as the last is much the most amusing, I wish you would stick to it.

Such, my dear doctors, is the sum of my protest. I presume you will not be silly enough to print it, for it treats of family matters not intended for the public eye. But if impelled by the want of matter, a condition, it is said, not uncommon with journalists, you desire to make use of it, I implore you to strike out the passages that would get me into trouble, and above all, to make it strictly anonymous, else I should have such a hornet's nest about me that I should be compelled to leave the county where I have practiced for twenty years.

One of your most faithful subscribers and sincerest admirers,
X——.

[No man who calls *our* editorials diabolical, deserves a place in this Journal; but he always pays in advance, oh, noble virtue, and really means no harm. So, reader, you may either laugh at "X." or your humble servant—THE EDITOR.]

ART. IV.—*On the Use of Belladonna as an Anti-Galactic.*

By J. B. McCaw, M. D., Richmond, Va.

Observation and experiment have long ago proved the existence of a class of medical agents, capable of exciting and increasing the secretions and excretions of the body. It ought not, therefore, to surprise us if in time we should discern an opposite class of medicines, which we may appeal to with confidence to check these secretions when they seem disposed to pass the bounds of a healthy moderation and become serious, if not fatal drains upon the system.

The excito-secretory agents may be divided into various sections. There are some seeming to direct their influence towards the skin, as the diaphoretics; others to the kidneys, as the diuretics; and even these may still be subdivided; for example, when we compare the action of the salines or the vegetable diuretics, as wild carrot and parsley, with those agents tending to increase the solid portions of the urine, as colchicum and guaiacum.

Another class of excitants act apparently directly on the glandular system. For instance, calomel, which, as the old doctors often say, is administered to "correct the secretions." This remedy not only favors the increase of perspiration and urine, but acts powerfully upon the secretion of bile, and when carried to the point of ptyalism, produces a disagreeable and sometimes serious super-secretion from the salivary glands.

The great power of iodine in this respect is also familiar to all; a remedy seeking to encourage the processes of secretion, absorption and molecular changes, with a power and certainty not to be surpassed. Neither should arsenic be overlooked in this sketch of the leading excito-secretory agents, modifying, as it often does, the complicated and delicate mechanism of the cutaneous system, and overcoming the most obstinate forms of disease.

It is certainly true, however, that the profession at this time, knowing well how to arouse the secretions and increase the excretions, are not equally successful in the attempt to control the morbid and over-excited glands, when, under the influence of deranged function or altered organism, they exceed the bounds of healthy action.

Something has frequently been attempted, indeed, in this way by practitioners; examples of which may be seen in the combinations of opium with calomel; and acetate of lead with opium, to check the serous discharges; or the astringents generally when used with this object.

In the last few years, however, many observations have led to the conclusion that it is possible to find remedies as potent to check, as any we have to promote, glandular secretions proper, and hence it is not uncommon to observe prescriptions praised for their power to control the profuse discharge of saliva following the use of mercury; the over-secretion of seminal and prostatic fluid observed in spermatorrhœa, or the unnatural flow of milk occurring not unfrequently, and occasionally running to a most dangerous point.

Of this latter class of remedies there is no one more deserving of notice than the *belladonna*. Belonging to the order of nar-

cotics, it might, *a priori*, be expected to moderate the discharges of the body as we know opium often does; but experience has given to belladonna the still greater power of acting specifically on the glandular system proper, and the value of this plant in ptyalism, polyuria and galactorrhœa, is often noticed in the medical journals of the day.

I propose in this paper to relate *four cases* of profuse secretion of milk treated with belladonna, taken internally and used topically, which, I think, will indicate the value of the agent in that respect, giving it a power which can be often turned to good account by the physician:

CASE I.—Mary, a very bright mulatto girl, who had been tenderly reared about the house, and was nurse to the children, of the family, married at about the age of twenty years, and in process of time gave birth to a healthy infant. She had always been healthy, and was fat, active, and had a very finely developed bust.

In two months after her delivery, it was evident that Mary was losing flesh and strength, and upon inquiry it was found that the secretion of milk was on an enormous scale. Her child, although a very large one, could not empty the glands, but there was a perpetual leaking, under which she was rapidly failing. Her mistress postponed, however, doing any thing, but made her attempt to wean the child, with the hope that the flow would gradually moderate. This was of no avail, for, in a short time, the girl had emaciated to an alarming degree, was anemic, nervous, with swelled legs and pallid distressed countenance. At this time I saw her, and found that the milk flowed day and night, almost without cessation, and that it was necessary to suppress the secretion, if possible, at once. The belladonna was resorted to internally in 1-6 grain doses of extract, thrice a day, and an ointment of the extract and lard, (equal quantities,) rubbed into the breasts. She was encouraged to eat heartily, and was ordered cod liver oil and mur. tinct. iron, as a nutrient tonic. In a week the secretion began to diminish, and I stopped the belladonna, continuing the cod liver oil and iron; but the patient not improving, the narcotic

was again ordered, and kept up for nearly a month, when the girl was restored to health and strength. She has since had another child, which she nursed the usual time without any bad consequences.

CASE II.—A negro woman, aged 26, was delivered of a *dead* child. She was robust, and had large mammary glands. I determined to try the belladonna before the secretion commenced, and the morning after the delivery put her on the extract in doses of 1-6 grain, thrice daily, and applied a poultice of the belladonna leaves to the breasts. The success of the expedient was marked. Her breasts were only drawn twice, and the secretion never was fully established. There was a severe febrile paroxysm about the twelfth day after delivery, which I attributed to the rapid and almost entire suppression of the lacteal flow, but this yielded to free purgation.

CASE III.—This lady I delivered of her third child. She shewed me her breasts, covered with scars, and said that on both previous occasions she had repeated abscesses of the gland, owing to the great quantity of milk which could not be taken off. At the last delivery her breasts had been lanced *sixteen times*.

Here I attempted the belladonna immediately, and used it altogether *externally*. The spongio piline was procured and accurately fitted to the glands, leaving out the nipples, and these artificial poultices were kept constantly filled with a strong infusion of belladonna leaves. The infant nursed as usual, but was carefully watched, as there was reason to fear that the narcotic might be absorbed in amount sufficient to effect its system. The patient had but little hope, however, and her friends were anxious that she should not attempt to nurse the child; but the result was very satisfactory. The secretion was very moderate, slow in coming on, and the soft, warm spongio piline encouraged a quiet flow, which enabled her to nurse the baby safely. After three weeks she abandoned all treatment, and is now, for the first time, with her child at the breast, and without an abscess.

If these observations can be relied on, we have, then, in beladonna, a remedy which will stop secretion almost as certainly as mercury and iodine will excite it; and, as in the cases reported, we may appeal to its specific effects in the management of some of the most troublesome complications of the lying-in chamber. After some experience of its virtues, I am satisfied that it deserves the notice of the profession.

TRANSLATIONS AND SELECTIONS.

I. *Metallo Therapy. The application of metals to the skin, a means of diagnosis and treatment, in nervous disorders.*

We have remarked, of late, that, in order to ascertain the nature or confirm his previous diagnosis of certain nervous disorders, Mr. Trousseau uses metallic plates, generally copper or steel, an application derived from a method promulgated under the name of *metallo-therapia*, by Dr. Burq, in the year 1851. We shall, in the first place, record a clinical case illustrative of the utility of this means of investigation, and, in the second, endeavor to give some insight into Mr. Burq's method, and the principles upon which it rests.

An Alsacian peasant-girl, aged twenty, and suffering from hemiplegia of the right side of the body, was recently admitted into Saint-Bernard's ward, in the Hotel-Dieu. The patient, who had not resided long in Paris, had menstruated late in life and the catamenial functions had never been regular. One evening, a man penetrated into her chamber; her menses, which were then flowing, were suddenly suppressed by the alarm she experienced, she fainted, and, on recovering from an unconsciousness of short continuance, she was paralyzed on one side of her body. "Here, if ever," said Mr. Trousseau, "congestive metastasis on the brain might be supposed to have occurred," and yet he considered the paralysis to be entirely due to hysteria. In this case, the hemiplegia, which is not, it

is true, a common result of mere congestion, rapidly yielded, although no other treatment was prescribed but a bath, which doubtless had very little to do with the improvement. The patient, moreover, complained of acute pain in the fore part of the head, a symptom of frequent occurrence in hysteria. It is true that the spinal tenderness, more generally observed between the last cervical and the first five, six or seven dorsal vertebræ, was here altogether absent, but common sensation was unequally distributed in the skin, several regions of which were quite insensible to pain. Under these circumstances, Mr. Burq was requested by Mr. Trousseau to apply his metallic plates to the integument. After some unavoidable research, common sensation was awakened on the back of the fore-arm by contact with a steel plate and the dynamometer also showed an increase of muscular energy in the limb.

"This," said Mr. Trousseau, "is most important with reference to diagnosis, for, when paralysis is the result of some organic change in the cerebro-spinal system, sensation and muscular power are almost invariably abolished, and in too lasting a manner to allow of any improvement from metallic excitation: this being the case, a correct diagnosis is a certain guide to prognosis and to an appropriate treatment."

The day after her admission into hospital, the patient was bled from the arm, a course Mr. Trousseau was induced to adopt from the remark that, in similar cases, blood-letting is almost immediately followed by the appearance of the menses; in the present instance, his expectation in this respect was disappointed. After a short stay in hospital, during which the steel plates were repeatedly applied with constant reproduction of sensation and increase of muscular power, the patient was discharged: the hemiplegia was cured, but of course not the hysteria, and she also preserved some disturbance of vision.

Chlorosis is another very common morbid condition, in which diagnosis is powerfully assisted by the external application of metallic plates. A careful practitioner will, doubtless, always readily discriminate this malady from anemia, in spite of the deceptive resemblance of the complexion and outward aspect in both diseases. In order, however, to dispel all doubt, it may be useful to have recourse to Mr. Burq's touchstone. In anemic subjects, common sensation is seldom modified, and though muscular power is comparatively smaller than in health, the diminution of contractility bears equally upon both sides of the body, and the right hand preserves its superiority of strength over the left. This might be expected to exist also in chlorosis, but the contrary is observed. Chlorosis is a real cachexy

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more or less deeply rooted in the system, and persevering occasionally with deplorable tenacity; whereas anemia is a pathological condition always of recent origin, which readily yields to proper diet assisted by the exhibition of a small quantity of iron. In chlorosis, therefore, common sensation is always lessened, and, in one of our patients, who, for ten years, has been in a chlorotic state, and whose skin is insensible to pain in almost the whole of its extent, the diminution of muscular power is so marked, that, under the influence of the outward application of gold, in her case the active metal, her left hand displays, by the dynamometer, more strength than her right.

Agreeably to all generally received physiological notions, Mr. Burq admits in health the existence: 1, of a sanguineous circulation, centered at the heart, and intrusted with the duty of conveying the nutritious fluid into all parts of the body, even to the surface; 2, of a nervous circulation centered at the brain and spinal cord, and transmitting, through the instrumentality of the nerves, the nervous fluid into the same organs, in order to preside over nutrition in all, contractility in some, e. g. the muscles, sensation in others and especially in the organs of sense and the integument. In health, the distribution of the sanguineous and nervous circulations is in some degree parallel; but, if a pathological condition, deriving gravity from its intensity, its continuance, its nature, or from the fact that it interferes specially with nutrition, becomes domesticated in the system, the equilibrium, the parallelism above alluded to is immediately disturbed and destroyed. We then observe those rapid and transient congestions of various organs, of various parts of the integument, alternating with anemia in the very spots previously the seat of congestive action, and hence sudden flushing or paleness, intermitting murmurs in the heart and large blood-vessels, an extremely variable frequency of the pulse, and sensations of heat and cold in different parts of the skin. Then also we notice, in serious cases of disturbance of the functions of the cerebro-spinal system, tonic or clonic spasms and convulsions, and concomitantly a diminution of muscular power always readily detected with the assistance of the dynamometer. This instrument, of Mr. Burq's invention, shows that, whenever pressure with the right hand during health amounts to 80 or 100 pounds, pressure with the left does not exceed 70 or 80, the only exception being in favor of left-handed persons with whom the reverse is observed. Now, if a morbid condition supervenes, not only is strength decreased on the right side, but it ceases to preserve its proportion with the muscular power of the left side, and, although a patient may not be left-handed, an equal or even a higher

amount of force may exist on the left side than on the right. But *amyosthenia*, as Mr. Burq denominates this loss of strength, indicates but an unimportant diminution of nervous influence upon the muscular system; in a more advanced form, true paralysis of motion is observed. The disturbances of the motor power of the muscles constitute, however, but one of the forms of diseased action of the nervous system. Thus, this system not only presides over muscular contraction, but also over sensation, whether the term be applied to the organs of special sense, sight, olfaction, taste, etc., often modified or perverted by disease, or to general common sensation, in the integument. Common sensation, as Mr. Beau properly remarked in his memoir on anæsthesia (*Arch. génér. de Médecine*, 1848,) should be divided into two sections: 1, sense of touch; 2, sense of pain. When both senses are uninjured, common sensation is perfect; anæsthesia is present when the sense of touch is perceptibly diminished or destroyed; analgesia is said to exist when it is the sense of pain which has undergone diminution or has been abolished. We should premise that complete or even partial anæsthesia is far from common and is scarcely ever consequent upon analgesia; the latter deviation of sense is far more frequent, and is almost constantly to be met with as one of the premonitory signs of improper distribution of nervous influence, more particularly in the different forms of neurosis.

To recapitulate, we may therefore assert that no serious morbid condition of the system, no disorder of the functions of the body can exist for any length of time, without more or less disturbance of the equilibrated distribution of nervous influx and of the sanguineous circulation.

These preliminaries lead to a ready intelligence of the applications of metallo-therapy to the diagnosis and treatment of disease.

So early as February 4, 1850, Mr. Burq forwarded to the Academy of Sciences an account of the results of his researches, from which the author established that whenever a metallic plate or ring is applied to a paralyzed limb (of course in the absence of organic change in the cerebrum,) the patient almost invariably after a few minutes, experiences a certain amount of tingling, and, if anæsthesia was present, the sense of touch returns, and where the sense of pain had ceased to exist, it reappears, as may be ascertained by pricking with a pin the parts lying under the ring or plate. Moreover, in the region experimented upon, a certain amount of heat, perspiration and weakness is discernible; after sensation has thus been restored, the dynamometer also shows that muscular contractility

has evidently increased ; and the patient, who previously possessed in his right hand an amount of strength equivalent, let us say, to 40 pounds, now displays an energy of muscular contraction equal to from 50 to 56 pounds, and the power of the left hand is also proportionately increased. We have stated that the re-appearance of common sensation and of muscular contractility are preceded and followed by heat, tingling and slight perspiration ; now these three phenomena are clearly but the result of the excitement of the circulation. Thus the prick of a pin, which, previously to the experiment, produced no painful sensation and no outward appearance, now causes pain and even occasions the formation of a red areola, and sometimes is followed by the oozing of a small quantity of blood. If the plate be removed, the symptoms which had followed its application gradually subside, and are reproduced by a fresh resort to the metallic appliance, until they at last become stationary, a result to be expected only from several days of successive experiments. The sense of local debility, consequent upon the use of metals, is, according to Mr. Burq, produced by the withdrawal of a certain amount of the nervous fluid by the plate, and constitutes a subtraction of nervous influence analogous to the subtraction of blood in phlebotomy.

As to the choice of metals, experiment alone can guide the operator. It is by the successive application of various plates upon the insensible and weakened part that the metal most appropriate to each case can be ascertained; copper, steel or iron, silver or gold, or an alloy of two or more of the above metals, will thus be found most efficient. The particular metal once decided upon, Mr. Burq is of opinion that the utility of its external application will be much increased by its internal exhibition. Thus a chlorotic patient, sensitive to copper, will in vain be treated by iron, whilst her disease will rapidly yield to the internal administration of preparations of copper, at the same time that the application of plates of the same metal to the skin will re-establish the equilibrium of common sensation in the skin and contractile power in the muscles.

To discover the metal most appropriate to each individual, is, as it were, to use Mr. Burq's expression, to feel the pulse of the nervous system: a novel and ingenious view replete with important practical consequences.

Hospital Sainte-Eugénie. Application of metallic plates in painful muscular contraction and in chorea. Dr. Bouchut's Clinical Conferences.

It is a well known popular prejudice that distressing cramps

may be relieved by the contact of a saucepan, a pair of tongs, a horse-shoe, in short of some metallic substance varying in nature and in shape in the different parts of the country. This is of course genuine empiricism; it is an old woman's remedy, an absurdity which awakens a smile, and yet, in this nonsensical practice lurks an idea, the methodical application of which has already yielded the most interesting results.

In a late number, we described Dr. Burq's method of *metallo-therapia*. Reverting to the numerous memoirs laid before the Academies by this ingenious practitioner, on the physiological and therapeutic action of metallic plates, we find that, so far back as 1849, Dr. Burq, during the epidemic of cholera, resorted with constant success for cramp, to the application of brass rings to the affected muscles.* This curious fact has,

* "The first case of cholera which was admitted into hospital Cochin," says Mr. Burq, "was a vigorous man, who, on the morning of the seizure, was as well as usual. He was received into Mr. Nonat's wards, towards 8 o'clock P. M., and already presented in the highest degree the undoubted symptoms of Asiatic cholera, cyanosis, refrigeration of the extremities, characteristic evacuations, and *violent cramps in the legs*. The same evening, towards seven o'clock, the hot air-baths, and various embrocations having produced no relief, a brass ring was applied to each leg, on a level with the contracted muscles, and the cramps immediately ceased. The patient enjoyed the most satisfactory repose for half an hour when we removed the rings, but the nervous symptoms returned after so short an interval, that the metal was replaced at the man's urgent request, and scarcely had it been complied with, when he ceased to complain.

"Somewhat later, in the course of the night, very violent cramps appeared in the arms. The sufferer, enlightened by the experiment of the morning, seized one of the rings, and as its form precluded its application to each part, he for several hours drove away the cramps wherever they occurred. The brass never once failed in removing them, and it was a remarkable fact that the operation being almost entirely performed with the right hand, the right arm was affected with cramps when from fatigue the patient was obliged to use the left hand. The following morning, he was quite free from pain, and his symptoms being to a certain extent alleviated, he was loud in the praise of the beneficial application of our metallic plates.

"On the same day, I caused a large number of brass rings to be constructed, and not only did I apply them myself at the same hospital Cochin, throughout the entire course of the epidemic, but night and day I visited the larger hospitals, Val-de-Grâce, Hôtel-Dieu and la Salpêtrière, where hundreds of cases had been admitted, for the purpose of instructing the attendants in the use of this remedy.

"Everywhere the metallic armatures, moistened when they were unsuccessful in a dry state, were found so serviceable that my respected and excellent master, Mr. Nonat, invariably entrusted to me the task of relieving his patients from the cramps, during the entire epidemic of 1849. Drs. Masselot and Krug, military surgeons of the Val-de-Grâce, published cases observed in Professor Michel Lévy's wards, in which the results were precisely similar to those obtained in our first case, at the Hospital Cochin.

"At nearly the same period, two of my colleagues, Drs. Durand and De-faucombe, were sent on a mission to the Department of Seine-et-Marne, and, in their report to Mr. Dumas, then Minister of Commerce, stated that at Biesles, at Nogent and elsewhere, our metallic armatures had become so

however, been allowed to fall into oblivion, and we scarcely know any one besides Mr. Bouchut, who, after ascertaining its accuracy, has endeavored to avail himself of the results attained by Mr. Burq.

We shall, in another part of the present article, describe how Mr. Bouchut applies metallo-therapia in the treatment of chorea, in a mode peculiar to himself. We are, however, desirous of pointing out previously some cases of painful muscular contraction, in which the pain and spasmodic action were speedily removed by the agency of plates of copper.

On the 7th of April last, a little girl, aged three years, was admitted into hospital by Mr. Bouchut for contortion of the limbs, which had lasted twenty-four hours. The fingers and toes were contracted, red, swollen, painful, and so exquisitely tender that the least contact occasioned excessive suffering. Mr. Bouchut applied circularly to the arms, fore-arms, feet and legs nine bands of brass, 10 or 12 lines in width, secured by strings fixed in holes pierced at the end of each metallic plate. During the following night, the child was quiet and her sleep uninterrupted. In the morning, the hyperæsthesia was found to have much decreased, the armatures were not removed, and the skin became insensible to contact. Moreover, the contraction disappeared and the extremities became as flexible as in health.

The child was cutting teeth at the time, and perhaps the spasmodic state of the muscles was connected with this fact. A trifling circumstance, indeed, may occasion these nervous disturbances, the cause of which is vainly sought for in the nervous centres. Like all other forms of neurosis, the disease under consideration has an obscure origin. We do not of course allude to the contraction resulting from cerebral inflammation; we merely refer to that which is manifestly dynamic, essential and nervous. This disease in children often coincides

popular from their success that, as soon as a case of cholera broke out in a family, the inhabitants, almost all of whom were cutlers, manufactured them *extempore*, with strips of melchior, and applied them without awaiting the arrival of medical aid.

"Later, Professor Rostan recommended the method as follows, in his clinical lectures on cholera (*Gazette des Hôpitaux*, November 8, 1849): '...The attention of practitioners has been chiefly attracted to the cerebral phenomena; it is for these that the greater number of remedies have been imagined, opium and its preparations, both inwardly and outwardly, belladonna, sulphuric ether, chloroform, camphor, musk, etc.; but a special remedy, which we must not omit mentioning, is one supplied by physical science and recommended by Mr. Burq for cramps, precordial pain, suffocation, anguish; it consists in the application around the limbs and the body of metallic plates, a method you have seen us use in our wards, and almost invariably with success.' "

with the presence of lumbrics in the intestines, and is more frequently attended with diarrhœa than with the opposite condition.

During the month of February, a little girl, aged two years, was admitted into Mr. Bouchut's wards for painful contortion of the arms and legs. The fingers were bent, the hand was contracted upon the forearm, which was flexed upon the arm, and the lower extremity was in a similar state, considerable pain being present at the same time. The bowels were relaxed, and ova of lumbrici were detected by the microscope in the excrement. 2 grs. of santonine were accordingly prescribed and occasioned the expulsion of two worms; on the following day, the medicine was repeated, and three worms were passed. No other lumbrics escaped, and, on the morrow, the diarrhœa and distortion of the limbs had disappeared.

In some instances, however, children affected with diarrhœa and muscular contraction pass worms, anthelmintics are exhibited, and yet, in spite of this rational course of treatment, the symptoms persist. This was observed in a little girl, two or three years old, who was admitted into hospital in the month of March. Three weeks before her admission into the wards, the child, in consequence of a fall, suffered from distortion of the lower extremities; the toes contracted painfully with periodical exacerbations and intervals of comparative repose, a characteristic feature of the disease. One hand became affected in the same manner, and soon afterwards the other hand, and altogether the condition of the poor child was most distressing. Santonine was exhibited without any benefit, and Mr. Bouchut resorted to the application of brass rings to the forearms, wrists, legs and feet. On the following day, not only had the pain and contraction disappeared, but it was remarked with surprise that the diarrhœa had also entirely ceased. This was doubtless due to the fact that diarrhœa is frequently but a nervous symptom; in many circumstances, indeed, we find it resulting merely from mental emotion. We are therefore doubtless authorized to admit that, in the present instance, spasmodic action existed in the intestines as well as in the muscles of the extremities, coupled with an increase of the natural amount of secretion, and that both spasms yielded to the beneficial agency of the metal. In this case, the influence of the armatures upon the convulsive phenomena was most distinctly marked, and it was equally manifest upon the irritability of the skin. The child, before the application of the metallic bands, screamed dreadfully whenever she was touched; and twenty-four hours after the rings had been placed, the

irritability and screams ceased, anæsthesia having replaced hyperæsthesia.

When spasmodic contraction has lasted some time, the brass plates relieve the pain, but do not remove the rigidity of the muscles. The muscular fibres interfered with in their action undergo a fatty change, become pale and colorless, lose their transverse markings, and retraction takes the place of contraction. Under these circumstances, the armatures are still beneficial, in alleviating pain, but they are powerless to restore the muscle to its original structure and length. If the disease occupied the leg, pes equinus is the consequence of shortening of the gastro-enomius, and the surgeon must have recourse to Bonnet's method, which consists in straightening the foot by appropriate manipulations under the influence of chloroform.

Hence painful contraction, or muscular spasmodic action of recent date, accompanied by excessive irritability of the parts, is advantageously modified by the use of metallic armatures. We will now inquire into the effects of the latter in chorea.

Mr. Bouchut, having witnessed the successful application of Mr. Burq's method, was first induced, in the course of 1858, to test its influence in chorea. During that year, he cured two cases of that disease, the first in twenty-four hours, the other in three days. In two other instances, he failed altogether, and in a fifth patient the symptoms were aggravated. He has further noted two examples of partial cure, which yielded in the end to the internal use of copper filings. In 1859, Mr. Bouchut failed once, effected one complete cure in three days, another in a week, and, in a third case, great improvement, followed by an almost complete cure, was obtained in eight days.

The second of the patients observed in the course of the present year had been suffering, for three weeks, from violent and general chorea. She could not work, she broke whatever she laid her hands on, and occasionally bit her tongue. At the same time, common sensation was much altered and excessive hyperæsthesia was present. Five brass bands were applied and secured to the limbs, considerable improvement occurring as early as the second day, when the number of the armatures was increased to seven, and on the morrow, the irritability of the integument and the chorea had disappeared altogether.

Whenever, in these experiments, the cure was prompt and complete, anæsthesia was produced concomitantly. But, when this symptom was not observed, the therapeutic effects of the method were found to be slower and less perfect. In one case, in which twenty-four hours were sufficient for recovery, an eruption of white pimples broke out under the metallic plates,

and ulcerations followed, which healed but slowly and occasioned much trouble.

Such are the facts, towards which we were desirous of calling the attention of the profession. The satisfactory results of metallo-therapia, in essential muscular contortion, are already sufficiently numerous to be conclusive, but we cannot say as much with regard to chorea. In some patients, the armatures have been successful; in others, they have failed: a difference in the results probably referrible to the fact that the causes of chorea are various. Thus, the disease may originate in mental emotion, in the presence of worms, in rheumatism, or in chlorosis; and perhaps no form but the essential variety of chorea will derive any benefit from metallic agency. It is unnecessary for us to add that we cannot be too reserved in a question of this nature, ignorant as we yet are of the mechanism by which the therapeutic action of the metal is produced.—*Championniere's Journal*.
H. CHAILLOU.

II. Letters from France.—No. I.

PARIS, NOVEMBER 21, 1859.

THE opening of the Medical Session here was inaugurated on Wednesday last with the usual pomp and ceremony, in the large amphitheatre of the "Ecole de Medecine," which was crowded to the door with students and others interested in the event. As is usual at this annual ceremony, an oration was pronounced and prizes, in the shape of medals, were distributed to the "Laureats" of the past year. For one of the prizes (the Corvissart, I believe,) not one of the essays sent in for competition was considered of sufficient merit to entitle it to the reward, and the announcement of this fact was followed by a general murmur of disapprobation on the part of the students, which, however, was speedily suppressed by M. Gavarret humorously remarking that the fault did not lie with the Faculty, but with the students themselves. M. Wurtz, Professor of Chemistry, was the orator of the day, his subject being the "Memory of M. Soubeiran," one of two members of the Faculty who, since its meeting of last year, has paid the debt of nature. As mention was merely made of M. Berard's death, it is to be presumed that his eulogy is reserved for some future occasion, for he was sufficiently dis-

tinguished to merit a few remarks. The discourse of M. Wurtz was comprehensive and pithy, and captivated in a more than ordinary degree the attention of his audience. The compliments he paid to the memory of his colleague were extremely graceful, and some of his remarks unusually happy and effective. Commencing with Soubeiran's boyhood, he rapidly traced his career through all its varied phases; remarked on the extraordinary difficulties with which he had struggled in his progress from comparative obscurity to the high and honorable position to which he had attained a few years before his death; and attributed his entire success to the untiring study and indomitable perseverance for which he was so remarkable. Of patronage he had none, but conquered every step by his own unaided efforts. In speaking of the discoveries he had made in pharmaceutical chemistry, the orator showed that Soubeiran's mind was essentially practical in its character, his investigations bearing specially, and, as if by preference, on the composition of those medicinal substances which are of acknowledged utility in the treatment of disease. To mercury, and its varied combinations, he had not only devoted great attention, but had, by his sagacity and perseverance, succeeded in imitating so well the English calomel, that the French no longer found themselves under the necessity of having recourse (as had been their wont) to the London market for this highly important and invaluable preparation. With Leibig he shares the merit of having discovered chloroform: both these distinguished chemists having arrived at this important discovery about the same time, the researches of the one being quite unknown to the other. While according to Soubeiran's memory the praise which he so justly merited, I could not help thinking that M. Wurtz would have done well, when speaking of chloroform, to have made some slight mention of our distinguished countryman, Dr. Simpson, of Edinburgh, for certain it is, that this substance (though it may have been discovered by Soubeiran) was, as it were, a dead letter, a mere curiosity on the shelves of the laboratory—its utility having been utterly ignored—until Simpson proclaimed to the world its powerful and invaluable properties as an anæsthetic, and assigned to it the important place it now occupies in the domain of practical medicine. The subjects of prizes for the current year having been announced, M. Dubois, the Dean of the Faculty, declared the session opened, and the meeting ended.

At the Hôpital Lariboisière, M. Chassaignac is just now treating a case of club-foot, of the valgus kind, by the application of electricity, under the personal direction of M.

Duchèsne (de Boulogne), who has the merit of having introduced this novel method of treatment, and, so far as the case has gone, it is likely to have a favorable termination; the foot, after but two or three faradisations, having already become more natural in shape. It may be known to most of your readers that the action of the peronæus longus muscle is of a threefold kind; for example, it produces a rotatory movement of the foot, by which the plantar surface is turned outwards; it bends the foot, and it also turns the point of the foot outwards. In addition to these functions, M. Duchèsne has discovered a fourth, and in this new capacity he regards it as a kind of active ligament of the plantar arch, which is developed by the contraction of this muscle. For this last-mentioned function, as well as for the three others, the peronæus longus lateralis has for its antagonist the tibialis anticus, the contraction of which produces straightening of the foot and flattening of the plantar arch. Proceeding on these views, M. Duchèsne has succeeded in curing, without having recourse to section of the tendons, a case of valgus club-foot in which the arch was unusually high, or to use the French expression, a case of "*valgus pied creux*." It has also been successful after the section of the peroneus brevis and of the extensor longus, in completing a cure in a case of valgus where, after the operation, the foot, on being placed in a proper position, was found to be perfectly flat (*valgus pied plat*.) For the purpose of giving an arch to the foot, he directed currents of electricity to the peronæus longus lateralis, and the result was all that could be desired, without the use of any mechanical appliances. This latter patient, it may be well to add, was seventeen years of age; and models of the foot, in plaster of Paris, taken before and after the faradisation, proved beyond doubt the efficacy of the treatment. The case at present under treatment at the Lariboisière Hospital belongs to this latter category, and whatever the ultimate result may be, one thing I could not fail to remark, in common with some other professional men present, viz: that during the faradisation of the peronæus longus muscle, there was a tendency to the development of the plantar arch; thus giving evidence of the existence of the fourth, or new function, attributed to this muscle by M. Duchèsne.

Last week I saw M. Sichel, at his Clinique, perform extirpation of the left eye, in the case of a man some 30 years of age. The operation was deemed necessary in consequence of the existence of a tumor, situated at the inner and lower portion of the bony orbit, which during its development had completely destroyed the sight of the eye; pushing the globe

forwards, upwards, and outwards. The tumor, on being examined *in situ*, presented the size of a large walnut, and could be pretty distinctly defined. It was of seven years' growth, and at one point fluctuation was perceptible. This latter circumstance, taken in connexion with the age of the patient, led M. Sichel to believe, or rather hope, that it might be a cyst; yet although the man was strong and vigorous, and apparently of a good constitution, the duration of the tumor, and more especially the slowness of its growth, rendered the diagnosis somewhat doubtful, and gave rise to a suspicion that it *might* be of a malignant character. The operation once decided on, it was carefully and ably performed, the tumor, together with the eye, having been removed *en masse*. M. Sichel, in the course of the dissection, finding rather suspicious evidence of the malignancy of the tumor, was particularly careful in removing every portion of tissue implicated in the morbid process. The hæmorrhage which followed the section of the optic nerve was not, in the first instance, great, and was easily controlled by the application of lint steeped in a solution of the perchloride of iron, but just as the dressing of the wound was about to take place, a violent attack of vomiting, the result no doubt of the chloroform, under the influence of which the patient had been kept for upwards of half-an-hour, brought on a recurrence of the bleeding, which for a few seconds threatened to be troublesome. It was, however, ultimately overcome by fresh applications of the same styptic, neither ligature nor actual cautery (which latter M. Sichel, by the way, loudly condemns under the circumstances) having been had recourse to. The patient has since progressed most favorably, and may now be considered convalescent, in so far, at least, as the operation is concerned. The tumor which, to the naked eye, had all the appearance of encephaloid disease, was forwarded to M. Robin, the famous microscopist, who pronounced it to be distinctly *encephaloid*, belonging to the variety styled "*melanique*," or melanotic.

In matters of this kind, M. Robin renders immense service to the profession throughout France. Pathological specimens of all kinds are daily forwarded to him, not only by the medical men in Paris, but by those residing in the remotest parts of the empire; and his judgment as to their nature is in all cases considered law. While speaking of this highly talented and scientific man, I may mention that his house is now the resort of the greater part of the enlightened and intelligent medical men of our own and other countries, who visit Paris. All are eager to secure a few hours' private instruction from him; and all those who have been fortunate enough to do so, agree in

saying that M. Robin is a most invaluable, intelligent, and pains-taking instructor.

Another case of tetanus has occurred here in the service of M. Follin, at the Hôpital Necker, in which woorara was tried, but without success, as the sequel will show. The patient, a lad 16 years of age, had sustained a fracture of the lower third of the radius of the right arm, accompanied by considerable bruising of the soft parts. He was admitted on October 28th, and up to the night of the 3d of the present month everything went on satisfactorily. On the morning of the 4th, the masseter muscles were observed to be a little contracted, together with convulsive movements of the muscles of the face. These symptoms rapidly increased in gravity, and at 8 A. M., there was some difficulty in opening the jaws. Deglutition was also difficult; the respiration was abdominal, giving twenty-eight inspirations to the minute; pulse 116.

At half-past eight, A. M., ten drops of solution of woorara (of the strength of one part of the drug to 100 of water) were injected by means of Pravaz's syringe into the cellular tissue of the forearm, the quality of the woorara having been previously tested by M. Vulpian, who is esteemed an authority on this subject. Each drop introduced by the half turn of the syringe was esteemed by weight at three centigrammes. A fresh injection was made every half-hour, the doses being gradually increased, so that at half-past two, P. M., they had reached twenty-four drops. About half-past four a more concentrated solution was employed, but the number of drops was diminished. These injections, like the others, were continued every half-hour, the dose being gradually increased. Up to a quarter-past nine there appeared no change in the tetanic symptoms, with this exception, that the masseter muscles were perhaps not quite so hard.

At eleven, P. M., the jaws could be more easily separated, and a certain amelioration was perceptible. Injections into the cellular tissue of the chest were now had recourse to. The improvement did not continue; the disease, on the contrary, making such rapid progress that, after a more than usually violent paroxysm, he died at half-past one, P. M., the following day. In connexion with this case, M. Follin afterwards gathered from M. Cl. Bernard certain facts which may in part account for the non-success of the woorara, M. Bernard declaring that the action of this poison is infinitely less marked when administered to the mutilated and suffering animal than when given to the healthy and strong.

Through the kindness of M. Hardy, one of the physicians of the Hôpital St. Louis, I had an opportunity of seeing,

some weeks ago, what is not met with every day in this part of Europe,—a well-marked case of genuine Hebrew leprosy, or, as it is called by writers of the present day, “elephantiasis of the Greeks.” The subject of it, a man, aged about forty, and a native of the Mauritius, is at this moment under treatment in one of the private pavilions attached to the St. Louis Hospital. The disease is confined to the face, but threatens to spread to other parts of the body. Altogether he presents a peculiarly repulsive aspect. The face generally is swollen, and the extremity of the nose, where the affection is in its most advanced stage, is a mass of rugged and unhealthy ulcers, which pour forth a sanious-looking discharge. On the cheeks are several tuberculous patches, considerably elevated and separated by fissures. These patches are irregular in form and size, and the skin covering them is in a state of comparative anæsthesia. The sensibility of the healthy tissues in their immediate vicinity is, however, slightly increased. Although M. Hardy, in common with the majority of writers on this disease, regards it as incurable, still, in the present case, the treatment, together with the hygiene to which the patient has been subjected since his admission, has to a certain extent had a salutary influence. His general health has benefited, and the local symptoms present a shade of improvement. M. Hardy does not consider the affection as contagious; in proof of which I may mention, that the patient occupies a bed in a small room where there is another individual suffering from a totally different disease.

In the male ward of M. Nonat, at La Charité, I saw lately a highly interesting case of aneurism of the arch of the aorta. The aneurismal sac formed a prominent tumor, visible at some distance, situated below the right clavicle. It was as large as a full-sized orange, its outer covering being formed of the parietes of the chest. The pressure of the sac had completely destroyed by absorption considerable portions of the two superior ribs. The pulsations of the tumor were very marked, and were synchronous with the heart's action. The subject of the disease is a locksmith, aged forty-two, and its origin is attributed by him to an unusual effort made while he was engaged in raising a very heavy weight some two years ago; since that accident, he has been from time to time affected with palpitation, giddiness, dyspnœa, and hæmoptysis. It is only nine months ago that the tumor has become visible externally. For the first part of this time it was quite globular in shape, but latterly it has become flatter, and seems now to be extending in the direction of the axilla. It is to be pre-

sumed that the aneurism must be of unusual size, as it is more than probable that all the soft and less resisting parts in its vicinity would be displaced, before it produced that amount of pressure on the bony parietes of the chest, necessary to the absorption of the ribs. The patient, for whom little could be done, was dismissed from the hospital, after having been relieved of an attack of distressing dyspnœa and hæmotypsis, by bleeding, cupping, and the internal use of astringents.

It would appear that the Medical Staff of the French Army, during the recent campaign in Italy, while courageously discharging the duties more immediately belonging to them, had not been inattentive to other matters bearing on the sanitary condition of the inhabitants of Lombardy. During their hurried march they had collected some thirty specimens of water, taken from the streams and rivers of the country, particularly in those districts where goître prevails. These specimens they analyzed with great care on their arrival at Milan, with the view of ascertaining what influence they might have in the production of that curious affection, the causes of which have been for many years the subject of much conjecture, and concerning which so much mystery still prevails. The conclusions arrived at, and which were communicated, in the first instance, by M. Demortain, the Pharmacien-en-chef of the Army, to Marechal Vaillant, who afterwards submitted them to the Académie des Sciences, are altogether at variance with the observations made some time ago by Bouchardat. The researches of Bouchardat show that the salts of magnesia are found in abundance in the soil of all districts where goître is endemic, and to them he is disposed to assign an important part in the production of that disease. The analysis conducted by M. Demortain and his assistants, show, on the contrary, a total absence of the salts of magnesia in the water collected in those districts of Lombardy where goître, or wen, is most prevalent, as also the simultaneous absence of all muriates. In fact it was only on treating large quantities of these waters at a time with nitrate of silver and nitric acid that even a trace of a muriate could be detected.

M. Gosselin, of the Hôpital Cochin, at the meeting of the Academy of Medicine on the 25th ult., read a very interesting and somewhat remarkable paper on the taxis, and especially its *forcible* and *prolonged* employment in the treatment of strangulated hernia. In this paper, after alluding to some eighty-five cases which had come under his care, thirty-five of which he had treated with considerable success by the forcible and prolonged use of the taxis, he entered into details of his mode of procedure. He commences his manœuvres by exerci-

sing on the hernial tumor gentle and moderate pressure, and if at the end of five or six minutes the reduction has not been accomplished, he increases the pressure by using both hands, at the same time leaning over the patient so as to add to the pressure made by his two hands, a certain part of the weight of his body, and sometimes even causes the hands of a powerful assistant to be placed over his own. To this latter manoeuvre he gives the name of "*taxis à quatre mains*." He continues this prodigious force steadily during twenty, thirty, forty, or fifty minutes, until the hernia is reduced or until the resistance is such as at the end of this time its reduction appears impossible. He regards of little value all the preparatory means usually recommended by authors previously to the employment of the taxis, such as warm baths, lacking the use of tobacco, enemata, etc.; such measures he considers lead only to the loss of valuable time. He, however, subjects all his patients to the anæsthetic influence of chloroform, not for the purpose of producing muscular relaxation, but to overcome their sufferings and so permit him to employ an amount of force which the cries and expressions of pain on the part of the patient might otherwise deter him from using. The conclusions arrived at by M. Gosselin, and which, I venture to say, will not be generally accepted as orthodox, are, 1st. That the forcible and prolonged use of the taxis is not so dangerous as surgeons generally suppose, and that its utility is far greater than that usually attributed to it; and, further, that it may be had recourse to without any risk during the first seven hours in crural and umbilical hernias. 2nd. That the treatment of strangulated hernia is essentially surgical, and should consist in the immediate employment of the taxis when this is possible, or in an operation where prudence does not sanction the use of the taxis. Temporisation is, according to Mr. Gosselin, permissible only when the diagnosis is not complete, and where, for the purpose of clearing up the difficulty, it is necessary to have recourse to a purgative.

Although the opinion of M. Gosselin is, from his position and great experience as a surgeon, entitled to very considerable respect, still I cannot help thinking that in the reduction of strangulated hernia it is an exceedingly difficult, or, I ought rather to say, an extremely thankless task to lay down any fixed rules, either in reference to the amount of force to be employed in the taxis, or as regards the length of time the manipulation should be continued. On these two points surgeons will, and must, in each individual case judge for themselves. Besides, by tact and ability, one man will often succeed with one-half the amount of force (and consequently with

less risk of doing mischief,) than that required by another, who goes about his work clumsily and awkwardly. I well remember having seen an illustration of the deplorable results of the prolonged and forcible use of the taxis in the service of M. Robert some twelve months ago. The operation was performed by that distinguished surgeon almost immediately on the admission of the patient, when the mesentery was found so much lacerated, and the gut so much injured in consequence, that a large portion of the former, together with some three or four inches of the latter, required to be cut away. M. Robert at the time expressed his conviction that the entire mischief had been the result of the injudicious and forcible employment of the taxis.—*Medical Times and Gazette*.

III. *Hypnotism—A new Anæsthetic.*

PARIS, DECEMBER 16, 1859.

Three winters ago, table-turning and tipping were the great source of amusement and investigation in the gay, as well as the scientific world of Paris. That immense humbug having, however, been pretty well used up, Paris has now got hold of something else, which, uniting the scientific with the amusing, and gratifying curiosity and the love of the marvellous, promises to become as popular as the turning table did, and, there is reason to believe, will be attended with more important and beneficial results.

The medical faculty of Paris are now earnestly engaged in experimenting upon a new method of anæsthesia, which promises, to a certain extent, to do away with the use of chloroform in surgical operations; and as the system has been introduced, and the experiments are now being made by regular physicians and surgeons in high standing, the statements of the results are not only of interest, but entitled to great respect. The new mode of producing sleep and insensibility consists in placing a small, brilliant object before the eyes of the person upon whom the experiment is to be made, a few inches above the root of the nose, so that the patient cannot regard it without squinting. The eyes being fixed upon this object, the pupils immediately commence contracting, but soon after dilate, and in from one to five minutes a state of catalepsy is produced, so that the limbs of the patient, being

raised or bent in any position, remain fixed as they are placed. This, however, is only the most unimportant portion of the phenomena produced. Insensibility to pain ensues, during which surgical operations may be performed without the knowledge of the patient and without the exhibition of as much sign of sensation as is usually exhibited under the influence of chloroform. Doctor Azam, of Bordeaux, and M. Broca, of Paris, were the first to call the attention of the faculty to these extraordinary facts. The celebrated surgeon Velpeau communicated them to the Surgical Society, and recommended that experiments should be made, as they have been, by M. Velpeau, M. Follin, Verneuil, Faure, Troussseau, Denonvilliers, Nelaton, Azam, Robin, and other surgeons in the various hospitals of Paris. Hypnotism is the great subject of the day, and having witnessed the experiments referred to below, at the Hospital Neckar and the Hotel Dieu, I can vouch for the perfect accuracy of their description.

The following description of the cases already experimented upon, I translate from the *Gazette des Hopitaux*. The first case mentioned is communicated by M. Broca to the Surgical Society. The first subject, says the *Gazette*, was a woman twenty-four years of age, who had a large burn on her back and lower limbs, with a large and very painful abscess. Exhausted by pain, and besides very obstinate, this woman dreaded very much the opening of the abscess. She was told that she was to be put to sleep. A little copper cylinder was placed at a distance of fifteen centimetres (between five and six inches) in front of the root of the nose. The patient, in order to fix her eyes upon this object, was obliged to squint strongly, and the pupils were soon powerfully contracted. The pulse, already rapid, was at first slightly accelerated, but immediately afterward became much more feeble and much slower. At the end of two minutes the pupils commenced to dilate, and the left arm, raised almost perpendicularly above the bed, remained fixed in that position. In less than four minutes the responses were slow and almost painful, but perfectly sensible. The respiration was short and quick. At the end of five minutes, M. Follin pricked the skin of the left arm, which was still remaining in a vertical position. Another puncture which drew blood was unnoticed by the patient. The right arm was placed in the same position as the other, and the abscess was uncovered, the patient making no resistance, but saying very tranquilly that they were going to hurt her. At the end of seven minutes from the commencement of the experiment, M. Follin opened the abscess. A low cry, which continued less than a second, was the only sign of reac-

tion which the patient gave. There was not the slightest quivering in the muscles of the face or the limbs, and the two arms remained as they were, without the least displacement, and retained their position for several minutes afterward. Two minutes after, the position was still the same; the eyes were widely open and slightly moistened, the face was motionless, the pulse as before the experiment, the respiration perfectly free, the patient remaining insensible. The left heel was raised, and remained suspended in the air, and the cataleptic condition of the limbs continued.

M. Broca now took away the copper cylinder, which all this time had been kept before the eyes of the patient. He then gently rubbed the eyelids and blew upon them, upon which the patient moved slightly, and was asked if anything had been done to her, to which she replied, that she knew of nothing. Up to this time the three limbs remained in the attitude which had been given them. Another puncture was made upon the left arm, which the patient did not perceive.

Eighteen minutes after the commencement of the experiment, and twelve minutes after the operation was completed, the eyelids were rubbed and blown upon again, upon which the patient awakened almost instantly, and the rigid limbs fell at once. The patient rubbed her eyes and became perfectly sensible. She remembered nothing which had occurred, and was astonished to hear that she had been operated upon. Her condition up to a certain point was comparable to that of persons coming out of an ordinary anæsthetic sleep; but the waking was much more prompt, and without agitation or loquacity. The anæsthesia had continued at least twelve or fifteen minutes.

The same patient was placed a second time in a hypnotic condition, which was reached more rapidly than before. At the end of two minutes the arms were placed in a cataleptic state, and the patient did not feel the puncture of pins which were made in the right arm. The waking, which was spontaneous, was prompt, and no new features were manifested.

Another patient, Annie F——, aged 19 years, operated upon for a lachrymal tumor, now nearly cured, was put four times under the influence of hypnotism. This was the first woman upon whom Messrs. Broca and Follin had studied the effects of this curious phenomenon. In the four experiments the results were the same. A spatula was placed about five inches before and above the eyes.

At the end of one or two minutes there was a cataleptic condition of the limbs, sleep with snoring, and a complete insensibility to the pricking of pins and pinching of the skin.

A feather introduced into the nostril awakened no sign of sensibility. This patient was awakened by slight frictions and blowing of cold air on her eyes. In the last experiment with this patient, at the moment when the sleep commenced, M. Follin softly closed the eyes, removed the object upon which they had been fixed, and the phenomena of catalepsy and insensibility still continued some minutes. During her sleep the patient had but a very confused idea of what was passing around her. She thought she felt the surgeon touching her, but had experienced no pain.

Two attempts at hypnotism were made by Messrs. Azam and Follin upon a young girl of eighteen years, who had a sore foot. The results were not so satisfactory as in the preceding cases, but each time the patient experienced a noticeable slackening of the pulse, a slight cataleptic condition and partial insensibility.

Two other experiments, followed by very positive results, were made on the 8th of December by Dr. Azam. With the first young woman the catalepsy commenced at the end of a minute and a-half, and at the end of two or three minutes the catalepsy and insensibility were complete. The woman was insensible to the pinchings and punctures, and was seated on a chair, her arms raised, the fingers spread apart, the left leg was raised from the floor—in fact in a very tiresome position. At the end of five minutes she was awakened.

Upon another woman the insensibility was complete at the end of two minutes; but instead of the cataleptic condition being produced, there was a muscular weakness which made it necessary to support the patient. M. Azam gently lowered the eyelids and removed the spatula which was before her eyes. The patient remained insensible during several minutes, and could probably have been kept longer in that condition. She was equally with the others insensible to the prickings and pinchings and ticklings of the nostrils, and the soles of the feet, and upon waking she had no knowledge of what had taken place.

On the 7th of December, Dr. Azam, having informed M. Trousseau (one of the most celebrated of the Parisian medical professors) of some of the preceding facts, made an experiment at his request. The subject was a young woman who, for a long time, had been under treatment for epileptic fits, and who had no previous information of what was to take place. M. Azam requested the girl to gaze directly upon a pair of scissors, which he held at a distance of ten inches from her eyes. At the end of a minute and a-half M. Azam raised one arm, which remained in the position in which he placed it.

M. Trousseau then raised the other, which also remained horizontally extended. The soles of her feet were tickled, she was severely pinched, and pins run into various parts of her body and still the insensibility continued, and after three minutes M. Azam awakened the patient by blowing upon her eyelids. She at first made severe, long inspirations, stretched her limbs and complained of great weariness and fatigue. She then remained for some time in a state of stupor, which continued longer than it usually did after the attacks of epilepsy.

The following morning M. Trousseau himself renewed the experiments, and having placed a brilliant object before the eyes of the girl, at the end of a minute the same phenomena occurred. He remarked that the sleep was produced even more rapidly, and this has appeared in several cases, proving that the oftener the experiments are repeated, the more rapidly is sleep produced.

The facts in relation to the hypnotic phenomena are fully established by these experiments, and I have seen M. Velpeau succeed in two experiments at the Hospital de la Charité, and have also seen several failures. It is not probable that the new agent can be profitably used excepting in comparatively few cases; but it is impossible to foresee what will be the results of the experiments now in progress.

The discovery, it seems, is not a new one, having been made some eighteen years since by a Scotch surgeon named Braid, who wrote a book upon the subject, entitled "Neurypnology, or the Rationale of Nervous Sleep, Considered in Relation to Animal Magnetism," but the subject, it seems, became "hypnotised," and has only been awakened in these latter days by Messrs. Azim and Broca, with the results which I have given above. There is no doubt, I suppose, but the new agent will be considerably experimented with upon your side of the water.

Substitute for Anæsthesia.

The Boston Traveller publishes the following:

RUE DE LA CHAUSSEE D'ANTIN, *Paris*, Monday, Dec. 12th, 1859.

I cannot let this steamship leave here and not acquaint you with one of the most extraordinary discoveries recently made. Monsieur Velpeau, the eminent surgeon, whose fame is wide as the world, made the strange communication. He stated that an honorable surgeon or physician (he vouched for the gentleman's character,) named Broca or Rocca, had made the following experiment: He had placed before the face of a per-

son, between the person's eyes; and at a distance of fifteen or twenty *centimetres* (a *centimetre* is a French measure of length—0.393,708 inch in value) a rather brilliant object (*un objet un peu brillant*.) Make the person look fixedly at this object. In a few minutes the person will squint, and will soon fall into catalepsy and be spontaneously deprived of all sensibility.

In the experiments made, the insensibility of the patient was so great that the patient's head was alternately moved from one side to the other, and his whole person was moved. He had no recollection of any of them when he returned to his normal state.

This singular discovery made Mons. Rocca or Broca suspect that this state of insensibility might be as perfect as that obtained by anæsthetic agents. He determined to make experiments with it, and found that the state of insensibility produced, was as perfect as that obtained by the use of ether and chloroform.

Three experiments out of five attempts are reported as successful. In one of these cases a man underwent a surgical operation for an abscess, which required an important incision. The insensibility lasted ten or fifteen minutes after the operation. The patient was entirely unconscious of all that had taken place.

The experiments mentioned by Mons. Velpeau may be easily repeated by anybody. Their importance in point of economy and money and life is serious. Chloroform and ether are both costly articles, and their use is attended with danger. They have destroyed more than one life, and medical men are still unable to vaticinate in what states of the body they may be used innocuously, and when they will extinguish life. Besides, their use in the lesser surgical operations, such as the extraction of teeth, is generally considered, out of the city of Boston, to be eminently injudicious. What a blessing this new discovery will prove, if time and experiment avouch all its present advantages.

Mons. Velpeau, in announcing the new discovery, said: "It is a strange phenomenon, so strange a phenomenon that I feel obliged to take some oratorical precautions in speaking of it to the Academy of Sciences. I feel obliged to draw assurance from the talents and honorable character of Mons. Broca, who has charged me with the duty of giving his discovery useful publicity, and at the same time of assuring his right to the discovery of this remarkable phenomenon."

Mons. Velpeau, therefore, does not present the new system of anæsthesia for a panacea, but he says to medical men:

"Use it, study it, experiment on it on useful occasions, and perhaps you may contribute to endow science with a new means of alleviating suffering humanity."

SPIRIDION.

CHRONICLE OF MEDICAL SCIENCE.

MEDICAL PATHOLOGY AND THERAPEUTICS.

1. *The Physiological Action of Anæsthetics.* Before the N. Y. Pathological Society. By Prof. DALTON.

Of course, Mr. President, I have very little experience with regard to the effects of these two agents upon the human subject, although, I had the pleasure of witnessing the first operation in which ether was used as an anæsthetic agent. In my own practice, if you may call it such, the patients have been principally animals. I presume, however, that there is very little difference in their mode of operation on animals and on men. When I commenced, I, of course, used ether; but as ether requires to be given in a very large bulk, I soon found it very inconvenient, and commenced using chloroform in its stead, and found it very much more pleasant for myself, because it was more easily administered to the animals, and I continued to use it for a certain time. Very soon, however, I found that the animals would occasionally die, which I attributed to some imperfection in the mode of administering the agent. I continued the practice, but still the accident referred to would occasionally occur. Not to take up too much time in details, the simple fact is, that, at the end of six months, from the time I commenced its administration, I abandoned it. Sometime afterward I again had occasion to use it; I gave it, but found that it was followed by the same results. Since that time I have given it up altogether, and instead of it I have used sulphuric ether. I think I may say, without exaggeration, that I am thoroughly convinced that there is a radical difference in the danger following the administration of these two

substances. I am sure that chloroform is more dangerous to animals, at least; whether it is so in man or not, I do not know.

In order to understand this subject thoroughly, it is necessary that we should endeavor to ascertain the manner in which death results in the fatal cases. Death sometimes follows without any evident or traceable cause. It may occur from ether or chloroform by a very careless administration, or from an impurity of the article, provided that the patient breathes nothing but the vapor of the ether or the chloroform. Now in these cases, death is not attributable to the ether or chloroform; it is simply due to the want of atmospheric air. If you give a man a grain of opium and then stop his mouth and nostrils, he will of course die; but certainly not from the opium, but from the want of atmospheric air. The same is true of the administration of ether or chloroform. Therefore the first thing to be attended to, when we wish to prevent a fatal issue from the administration of these substances is to see that they are given mixed with a sufficient quantity of atmospheric air, and then one cause of death would be excluded.

Sometimes, however, even with all our precaution, we find the respiration and the heart stopping suddenly and the patient dead. It is an interesting question to know whether or not death is produced by the *stoppage of respiration* or *of the heart*. My own belief is, that in the case of chloroform, death is produced by paralysis of the heart. My reasons for this view are two-fold.

In the first place, if you moderately etherize or chloroformize an animal, carrying it carefully just up to the point of insensibility, and then open the walls of the chest as quickly as possible, the lungs will of course collapse, and respiration be at an end, but the heart will continue to beat for a considerable length of time. If, on the other hand, you etherize or chloroformize an animal until respiration is stopped, and then open the chest, you will find the heart still beating, but very feebly. I have several times performed the following experiment, namely: to etherize an animal moderately, but enough to deprive it of all sensibility, then immediately the chest was opened and the animal laid aside; another animal was then etherized until death was produced, and on immediately opening the chest the heart was found still, while in the first animal it was yet beating. So far as this goes it tends to show with a great deal of conclusiveness, that the fatal result is produced by a direct paralysis of the heart.

In experimenting thus with animals, I have had occasion to notice very frequently, when the anæsthetic is carried only to the stoppage of respiration, that the animals usually recover, and expect with confidence that respiration will begin again; but if, on noticing that the respiration is stopped, I find the heart itself still, I know that the animal is dead, although I have noticed, after the circulation is at an end, that it is sometimes re-established in a certain manner which is entirely characteristic, and being once seen, is very readily recognized. This is, however, entirely unavailing; the animal never recovers.

In my own experience, then, fatal results have followed both ether and chloroform. I have killed dogs and cats with ether and chloroform, but I am obliged to take a great deal of pains to produce this result with ether, whereas death often follows the use of chloroform, notwithstanding the best precautions. It has been said, that when death occurs from the administration of chloroform in the human subject, that it is attributable to giving it too rapidly or too abundantly; but while there are undoubtedly many cases in which injurious results follow from the non-admission of a sufficient amount of air, still I am of the opinion that the injurious or fatal results cannot be always attributed to that cause, for the reason that these accidents have occurred in the practice of our best and most careful surgeons, who invariably exhibit this remedy with the utmost caution, and yet, when everything appears to be going on well, the patient suddenly dies. So far, we know of no precaution which will prevent the occasional occurrence of this accident.

PRESIDENT: I would inquire of Dr. Dalton whether the effects of these agents are cumulative?

DR. DALTON: I cannot say that they are. Anæsthetics taken in by the lungs enter the blood so very quickly that I should not think there would be any cumulative effect.

PRESIDENT: In some cases the patient seems to recover so as to speak, and yet in a few moments dies. Did you ever see anything of that kind in animals?

DR. DALTON: The only thing that I have seen analogous to that, is the spasmodic respiration after the stoppage of the circulation, which led me to believe, when I first saw it, that the animal would recover. I now know, however, that these efforts are entirely unavailing. When once the heart has ceased to pulsate, the animal is dead.

2. *Colica Pictonum. Treatment at La Charité.* By M. Trousseau.

A young man admitted into the ward with symptoms of painter's colic was cured in five days by the following treatment :

1st day. A decoction of cassia was prescribed, prepared as follows : bruise together legumes and seed of cassia 2 oz., boil in 40 oz. of water for a quarter of an hour, strain, and add one ounce of sulphate of magnesia, 3 grains of tartar-emetic, and one ounce of syrup of buckthorn. In the evening one grain of extract of belladonna was exhibited.

2nd day. The painter's aperient enema was administered prepared with an infusion of 2 dr. of senna leaflets in 16 oz. of boiling water, to which was added one drachm of powdered jalap, one ounce of the electuary diaphænix and of syrup of buckthorn. In the evening the patient took 2 gr. of extract of belladonna.

In the course of the night the bowels were relieved once.

3d day. A considerable amendment was observed. The following mixture was prescribed :

R.	Fol. sennæ	.	.	.	.	.	1 oz.
	Rhei contus	.	.	.	.	.	2½ dr.
	Boil for a quarter of an hour in aquæ	.					5 oz.

Strain, add :

Syrupi rhamni,	.	.	.	.	10 dr.
Sodæ sulphatis,	.	.	.	.	4 dr.

In the course of the evening the anodyne painter's enema with ol. juglandis 6½ oz. and vini gallici 10 oz. was administered. Also, a pill of 2 gr. of extract of belladonna.

From this hour the bowels acted freely, and the belladonna was continued alone. We should not omit to say that, in this case, Faraday's electricity was applied from the beginning, and had much diminished the pain, without however modifying in any principal way the disease.—*Champ. Journal.*

3. *A New Treatment for Gout and Rheumatism.*

In a report to the Academy of Medicine, M. Bouillaud describes the treatment proposed by Dr. Lecalvé for gout and rheumatism, two diseases which that gentleman conceives to

be nearly akin, and which should therefore be considered jointly.

The syrup and topical application in which Mr. Lecalvé's treatment principally consists are prepared as follows. For the syrup:

R.	Extr. spirit. aconitæ,	.	.	.	} aa 8 gr.
	— digitalis,	.	.	.	
	— menth. pip.	.	.	.	
	Extr. aq. Persicariæ.	.	.	.	16 gr.
	Aq. destill.	.	.	.	q. s.

Ut fiat solutio.

Syrupi gummi acaciæ. 10 oz.

For a syrup of which a tea-spoonful should be taken three times a day in a glass of gum and water.

For the topical application:

R.	Tinct. hederæ.	.	.	.	} aa 3½ oz.
	— scillæ.	.	.	.	
	— menth. pip.	.	.	.	
	— belladonnæ.	.	.	.	2 oz.

M.

A compress impregnated with this fluid should be applied to the seat of pain.

Mr. Bouillaud, in reporting on Mr. Lecalvé's communication, merely indicated, without expressing any approval, a method of empirical treatment proposed for diseases, one of which at least, rheumatism, is, in the opinion of the learned professor, essentially of inflammatory nature, and requires an energetic antiphlogistic treatment, for the purpose of averting cardiac complications.

4. Cod-Liver Oil Panada.

We are informed by the *Bulletin de Thérapeutique* that Mr. Bassi has recently proposed under this denomination a new method of exhibiting cod-liver oil, which has permitted this medicine to be taken not only without reluctance but with pleasure.

Take eight ounces of white bread broken in pieces, toasted at a moderately hot fire, throw them into a tinned saucepan with five pounds of water; boil down to one half; strain with

slight pressure, and heat gently until the fluid assumes a gelatinous consistency; add $3\frac{1}{2}$ ounces of loaf-sugar and 2 oz. of isinglass. Remove the mixture from the fire and allow it to cool; add 40 gr. of tartaric acid and mix.

The bread jelly being thus prepared, take:

Bread jelly	.	.	.	4 oz.
Cod liver oil	.	.	.	1 oz.
Cinnamon water	.	.	.	$\frac{1}{2}$ oz.
Essence of lemon	.	.	.	12 drops.

Mix well in a glass mortar.

5. *Hereditariness of the Epilepsy induced in the Guinea-pig.*
By M. Brown-Séquard.

One of the most interesting facts among those discovered by M. Brown-Séquard, is the production of epilepsy in the mammalia, and especially the guinea-pig, as a consequence of certain lesions of the spinal cord. He has frequently repeated these experiments, and with the same results. At a recent meeting of the Biological Society he related the results of the observations he had made during several years upon the young ones born of parents thus rendered epileptic. In some of these he has met with a very distinct epileptiform affection, with well characterised paroxysms, but differing somewhat from the epilepsy of the parents. In the latter, not only are there spontaneous paroxysms, but others may be induced at will, by irritating or pinching the skin of the face; but in the pigs which appear to derive their convulsive affection from their parents, paroxysms cannot be induced in this manner; while the form of those occurring spontaneously is not exactly the same. The animal is first seized with trembling, and then falling on its flank it agitates its limbs spasmodically. The young pigs thus affected have proceeded in about an equal number from epileptic mothers and fathers. Sometimes parents thus rendered epileptic by myelo-traumatism produce little ones, none of whom exhibit the affection, or while some do, others do not. M. Brown-Séquard has had under his observation a very large number of guinea-pigs, and while not denying the possibility of the fact, he has never seen a single animal present an analogous convulsive affection, unless it had previously undergone a lesion of the medulla, or was the offspring of a parent who had been rendered epileptic in this manner.—*Gazette Hebdomadaire*, No. 44.

6. Gout and its causes.

Mr. L. M. Bennett of Winterton Brigg, Lincolnshire, England, writes as follows to the *Lancet* for December 10th :

In a work written in 1804 by Dr. Thomas Garnett, of London, entitled "Popular Lectures on Zoonomia, or the Laws of Animal Life in Health and Disease," I find the following remarks on gout :

"The gout seldom occurs but in those who have for several years lived upon a full diet of animal food, often highly seasoned, and at the same time been in the habit of taking daily, or very constantly, a greater or less quantity of fermented liquors, either in the form of wine or malt liquor. This disease is seldom known to attack persons employed in constant bodily labor, and who live temperately, and is totally unknown to those who use no wine or other fermented liquors. I believe there never was an instance of a person having the gout who totally abstained from every form of alcohol, however he might live in other respects ; and I doubt if ever the gout returned after a person had abstained from fermented or spirituous liquors for two years. There seems to be something in alcohol which peculiarly brings on this state of the constitution ; and without it, it would seem the gout cannot be produced. Here, then, is an effectual method of curing the gout, which will no more return, if strictly persevered in, than the small-pox will attack the constitution after inoculation."—*Phil. Medical Reporter*.

7. Medical Excerpts.

Hydatid Tumors.—M. Wunderlich relates the following case :—A young man, aged 22, entered the hospital, complaining of headache, vertigo, etc. On examination, two large tumors were discovered—one in the epigastrium, and the other in the right iliac fossa. He was feverish ; his feet were cedematous ; and there was albumen in his urine. The tumors gradually increased, and at length the patient died. Two days before his death he was suddenly seized with great pain in the epigastrium and intense dyspnoea. After death an hydatid vesicle was found in a branch of the right pulmonary artery. A tumor of a like nature, as large as the head of a child occupied the position of the left lobe of the liver, and communicated with the pericardium, which was highly inflamed. The liver was pressed back by the tumor, which adhered to the diaphragm and abdominal walls. There were other hydatid

tumors in the spleen, in the cellular tissue beneath the peritoneum, in the omentum, under the cæcum, in the mesorectum, in the mesentery, and in the free extremity of the vermiform appendix.—*Gaz. Hebdom.*

Glucosuria in Marsh Fevers.—M. Burdel thus concludes a memoir upon this subject:—1. A true diabetes exists in marsh fevers. 2. It is only ephemeral, *i. e.*, being the evidence of the disturbed state of the economy, it appears, persists, and disappears with the fever. 3. It is the expression of the special disturbance of the equilibrium prevailing between the cerebrospinal and sympathetic nervous systems. 4. M. Claude Bernard's explanation is confirmed by these facts. 5. The more violent the paroxysm, and the more intense the shivering, the greater is the amount of sugar. 6. On the other hand, the greater the number of paroxysms which have taken place, and the more these have lost their force,—when, in fact, the cachexy has become established, the less is the quantity of sugar.—*Union Méd.*, No. 139.

Mixture for Dispelling Inebriety.—Several periodicals have stated that Dr. Beck of Dantzic had discovered in a mineral paste the true antidote of alcoholic inebriety. Mr. Chevallier, who mentions the circumstance in the *Journal de Chimie Médicale*, remarks that the real specific of intoxication is the acetate of ammonia, exhibited according to the formula of Mazuyer:

R	Ammoniaë acetatis	-	-	2 to 2½ gr.
	Aq. cum saccharo	-	-	5 oz.

To be taken in one dose.

Prof. Cruveilhier's Purgative Mixture.—Narbonne honey, 30 grammes; syrup of buckthorn, 30 grammes; powdered senna leaves, 4 grammes; powdered jalap, 4 grammes; powdered scammony, 1 gramme; powdered squills, 40 centigrammes; powdered calomel, 40 centigrammes; powdered digitalis, 40 centigrammes. Divide the mixture into four parts, and take the four doses in eight days—one every other day. Used in albuminuria.—*Répertoire de Pharm.*

Tannin in Albuminous Anasarca.—M. Garnier thus concludes a paper, strongly recommending tannin in albuminous anasarca, independent of Bright's disease, as, when consecutive to scarlatina, etc.: 1. Tannin given in quantities of from ½ dr. to 1 dr. per diem, relieves passive œdema or anasarca, VOL. XIV.—4

coinciding with albuminous urine. 2. Its curative agency is manifested by an increase in the quantity of urine, which also gradually resumes its physiological properties, increased transpiration, greater freedom of alvine evacuation, return of appetite, etc. 3. These signs of improvement may commence from the second day after the administration. 4. Given in solution, doses of from four to eight grains of tannin do not cause disturbance of the digestive organs. 5. Its action seems to be primarily exerted upon the liquids of the economy, coagulating and plastifying their albuminous principles. Its action upon the solids seems to be consecutive, tonic, and astringent.—*Archives Gén.* Tome xiii. p. 35.

Prescription for Diarrhœa occasioned by teething.—We read in the *Art dentaire*, that Dr. Eisenmann of Würzburg, and subsequently Dr. Rœssel and Schmidt, have frequently resorted with much success, in the case of diarrhœa, so frequent a concomitant of first dentition, to the following powder :

R.	Curpi sulphatis	-	$\frac{1}{2}$ gr.
	Opii	-	$\frac{1}{2}$ gr.
	Sacchari pulveris	-	q. s.
	M. Ft pulvis.		

The powder to be taken three times a day. In the cases related by Mr. Eisenmann, twelve powders checked the diarrhœa, and restored health in the greater number of instances in which the remedy was used.

Alum Lozenges in Affections of the Throat.—M. Argenti, of Venice, proposes, as a substitute for alum gargles in affections of the throat, lozenges formed of alum, sugar, and tragacanth, mixed up with diluted laurel-water, so as to form lozenges, each containing a suitable dose of alum. The mass is to be well manipulated, and, after division, to be put on a sheet of paper and dried by a gentle heat. The lozenges keep well, and form an agreeable medicament, which, by aid of the saliva, becomes effectually applied to the parts. A pharmacien of Paris has for some time past prepared chlorate of potass in the same manner.—*Bull. de Thérap.*, tome lvii., p. 413.

Fetid Sweating of the Feet.—M. Gaffard recommends as a most effectual agent, the applying between the toes of a few drops of the following liquid. An application once a week is usually sufficient, but during summer it may sometimes be required to be made daily :—Red oxide of lead 1 part, and the

liquor of the subacetate of lead of the French Codex (3 parts of acetate, and 1 of litharge, to 9 of distilled water) 29 parts; bruise the sesquioxide of lead in a porcelain mortar, and add the liquor gradually, directing the bottle to be well shaken whenever it is used.—*L'Union Méd.*, No. 102.

Citric Acid in Acute Rheumatism.—Dr. Hartung states that this substance acts more efficaciously than lemon-juice in acute rheumatism. He forms a mixture with six drachms dissolved in five ounces of water, and sweetened with two ounces of syrup. This is to be taken in from fifteen to thirty-six hours, the patient also drinking as much cold water as he pleases, and the parts being wrapped in wadding. Of forty-five cases of acute rheumatism, some of them very bad ones, so treated, in two only was the result not satisfactory. Sometimes, even after twenty-four hours of treatment, there is a notable diminution in the pain and fever, although in most cases from two to three days are required to produce this amendment. The remedy does not induce diarrhœa, and it favors transpiration.—*Gaz. des Hôp.* No. 134.

Injection of the Sulphate of Atropine in the Track of the Pneumogastric Nerve in Asthma.—The last Paris novelty consists in this treatment, by M. Courty, of the paroxysms of asthma in a case which had resisted a great variety of medicinal agents. He injected along the track of the pneumogastric nerve, on the inner side of the sterno-cleidomastoïdeus and on a level with the thyroid cartilage six drops of a solution of the sulphate of atropine, which produced vertigo, dilatation of pupil and other symptoms of narcotisation. Next day the injection was repeated on the other side, and thrown in more deeply, with the effect of producing still greater, though not alarming narcotism. A third injection, two days after the last, completed the treatment—the asthma having gradually diminished, and now, four days after the first injection, entirely ceased. The patient (a lady, aged 54) continued quite well two months after the treatment had been put into force.—*Moniteur des Sciences*, No. 37.

SURGICAL PATHOLOGY AND OPERATIONS.

1. *Deodorizing agents applied to hygienic and surgical purposes.*

The question of disinfecting agents is now one which occupies all men. Learned societies, physicians, surgeons, chemists, unprofessional persons, all have, for the last month, devoted their utmost attention to the solution of the problems suggested by Messrs. Corne and Demeaux's ingenious discovery.* So universal an interest in the matter can be accounted for but by the opportuneness of the communication made by the authors, and the high patronage under which they placed their invention. It was on the 18th of July, on the morrow of the bloody battles of Magenta and Solferino, that Professor Velpeau first described to the Academy of Sciences the advantages to be expected from coal tar and plaster applied to the dressing of wounds, and a week after, he concluded his official report with the following significant phrase: "We have reason to hope that Messrs Corne and Demeaux's plan for the disinfection of wounds will be of service to the poor wounded soldiers of our army in Italy." Our readers, in the article *Learned Societies*, will find two letters from Marshal Vaillant, which show how completely Mr. Velpeau's hopes have been realized.

The opportuneness and the *à propos* of the discovery have been the true cause of the universal emotion on the subject; but we must say that public opinion has been most grateful to Mr. Velpeau for the promptness displayed in testing experimentally, and in giving publicity to his estimation of the value of the new deodorizing process. The present unanimous assent is, for some few, but the acknowledgment of yesterday's error. Frivolity, siding, on a recent occasion, with quackery in its most ridiculous form, against true science, impersonated by one of its most eminent representatives, was perhaps guilty of a less injustice than the fastidious spirit which expressed unaccountable alarm at the admission into the wards of an hospital of the would-be remedies of a foreign mountebank. On the field conceded to experiment, by a respected medical authority, with all due consideration for the interests of

* We have already alluded to this deodorizing dressing of plaster and coal-tar.

humanity, the merit of useful inventions is established as easily as the ignorance of pretenders is unmasked. "When first," says Mr. Demeaux, "Mr. Corne and myself appeared at La Charité to apply our new dressings, pupils, patients and nurses did not conceal a feeling of malicious incredulity. The recollection of the Black Doctor was still fresh in their memories, and under these unfavorable circumstances, twenty-four hours were amply sufficient for our utter discomfiture." The apprehensions of these gentlemen were however soon dispelled, and the distrust awakened at first was shortly replaced by sincere commendations, and Mr. Velpeau was enabled, at the meeting of the Academy of Sciences of July 5th, fully to confirm his previous statements of the 18th.

As we have stated, the external application used by Messrs. Corne and Demeaux is a mixture of plaster and coal-tar. In a 100 parts of plaster, the proportions of coal-tar vary, according to the particular indications of each case, from one to two or three parts and more. This combination is spread over the surface of wounds, either in a pulverized state, or incorporated into a liniment or pomade with oil or lard. When placed in contact with wounds or animal matter, the compound absorbs fluids, instantly deodorizes ulcers or mortified textures, and substitutes for the most offensive effluvia, a bituminous and by no means disagreeable odor. We may add that, except in some few isolated instances, the application causes neither pain nor any perceptible inflammation or swelling, and that, far from interfering with the progress of detersion and cicatrization, it seems to promote the healing of the wounds and ulcers.

Similar results followed the use of Mr. Corne's deodorizing plaster at the veterinary school of Alfort, where experiments on the subject were instituted on a large scale, and were the means of bringing before the Academy of Medicine the important question of disinfecting substances. Mr. Renault, the learned director of the institution, described, at the meeting of 2nd August the comparative experiments he had made with the mixture of coal-tar and plaster, turpentine, creosote, tar, either separately or in combination with each other. From these researches it appears that the above mentioned substances all enjoy, but in different degrees, disinfecting virtues, and that these virtues are less marked when the balsamic or pyrogenous agents are used alone, than when they are mixed with plaster. Mr. Renault is inclined to think that the combination of vegetable tar and plaster is perhaps a better disinfectant than that of coal-tar with plaster; at least, the tarry smell of the former appears to him less unpleasant than the bituminous odor of the latter. For his part, Mr. Velpeau

declared he liked one quite as well as the other. The question at issue between these two gentlemen is therefore merely one of olfactory preference; but the much greater cheapness of bituminous tar gives to Messrs. Corne and Demeaux's mixture a decided advantage over vegetable tar, especially in extensive applications of the deodorizer to public hygiene. Mr. Bouley shares this opinion, and, as a surgical appliance, considers the new topic preferable to those with which it has been compared. This professor has tried it at Alfort in wounds of the parotid, the withers, the jugular vein, i. e. in the most fetid ulcers, and he ascertained that the immediate effect of the application had been to render an animal, which, but a few minutes before, was an object of insurmountable disgust, easily approachable. "I declare," said the able veterinary surgeon, "that the agent recommended by Messrs. Corne and Demeaux is indued with admirable disinfecting power, and that, far from retarding the cicatrization of wounds, it has appeared to me to assist materially the healing efforts of nature."

After some further clinical experiments at the hospital of La Charité, Mr. Velpeau was enabled to speak even more forcibly than he had done at the Institute, in praise of the new application. "I have never hitherto met," said the learned professor, "with a better dressing for wounds of a malignant nature. The plaster absorbs the putrid fluids as fast as they are formed, while the coal-tar counteracts the offensive odor emitted by the traumatic surface." The eminent surgeon, being further of the opinion that the agent proposed by Messrs. Corne and Demeaux, has given sufficient proof of its value, recommends much caution in making any changes in a compound which has been finally adopted by its inventors, after reiterated trials well calculated to determine the choice of the ingredients and proportions of the mixture. Thus Mr. Roissart of Marseilles, claiming priority of invention, forwarded to Mr. Velpeau a sample of a disinfectant consisting in a mixture of coal-tar and hydraulic lime. This topic was applied upon a cancerous ulcer of the breast, and caused such intense suffering to the patient, who had previously borne with ease the coal-tar and plaster mixture, that it was found necessary to abandon any further experiments with it. Finally, acknowledging that coal-tar and plaster do not altogether supersede the use of lint, Mr. Velpeau proclaimed that the advantages obtained by the application of the deodorizer were now fully established by numerous and positive facts. Its use is chiefly appropriate in the case of unhealthy wounds, secreting abundant suppuration and emitting fetid and gangrenous effluvia. In amputations, the professor of La Charité

would recommend its application in case only the wounds present the above characters; but Messrs. Corne and Demeaux's dressing might be highly serviceable to the wounded of the army of Italy, the injuries received in the field of battle, and especially those caused by cylindro-conical balls being much contused, and attended with lacerations, extensive destruction, sinuses, puriform collections, etc., circumstances requiring imperatively the application of prompt and sure means of disinfection.

The opinion of the profession has generally been favorable to these conclusions, and the invention of Messrs. Corne and Demeaux bids fair to be ranked as a conquest not less felicitous than it is opportune for surgical therapeutic.

We cannot better close the above article than by publishing the letters, highly flattering to Messrs. Corne and Demeaux, which have been forwarded to the president of the Academy by his learned colleague, Marshal Vaillant:

MILAN, August 3d, 1859.

"As soon as I was informed of Mr. Corne's splendid discovery, I hastened to communicate to Baron Larrey, head physician of the Army of Italy, the paper containing the intelligence, requesting him to apply, with all due prudence, the new method, with a view to the relief of our wounded. I need not say how happy Mr. Larrey showed himself to comply with my request and to seize a fresh occasion of displaying his wish to be useful. By his orders, one thousand kilogrammes (1 ton) of the Corne remedy were prepared, and nothing remained but to put it to the test.

"Mr. Larrey being summoned to Genoa on service, the experiments were instituted by Mr. Cuveiller, physician in chief of our hospitals in Milan. I have the honor of enclosing a copy of the report which I have just received from that zealous and learned physician; as you will perceive, this report justifies hopes as to the efficacy of the remedy. I should add that, in his verbal communications, the doctor expressed these hopes much more warmly than he has done in his written report, and that he stated that in the entire world, twenty wounds so frightful and offensive could scarcely be met with as those which have been the subject of the recent experiments."

Medical Report upon the Disinfectant Powder of Messrs. Corne and Demeaux.

MILAN, August 3d, 1859.

"Among the Austrian wounded, who were treated at the

San Francisco hospital at Milan, twenty presented wounds of a most unhealthy character, exhaling an intolerable stench.

"Agreeably to the instructions of Baron Larrey, the Corne dressing has been applied for three days by four French surgeons to these twenty men divided into four sections. As a disinfectant, the powder has produced unquestionable results: at each dressing the putrid condition of the wounds seemed to have improved, and their aspect was more favorable. The cases shall be taken down in detail by the four surgeons whose personal duty it is to dress the sores, and I myself visit the patients daily. The more satisfactory state of the other wounded has hitherto rendered unnecessary any further application of Mr. Corne's disinfectant.

"I shall have the honor, Mr. President, of communicating the further results of experiments commenced under such favorable auspices."

Another letter of a later date has been forwarded by Marshal Vaillant to the Academy, on the same subject. The following is a copy:

HEAD-QUARTERS, *Milan*, August 16th, 1859.

"I requested permission to acquaint you with the result of the experiments instituted at Milan, with Messrs. Corne and Demeaux's powder, upon the Austrian wounded lying in our hospitals. I am in receipt of the following, dated the 16th inst., from Dr. Cuveiller, whose first report I forwarded on the 3d of the present month:

MONSIEUR LE MARECHAL:—"Agreeably to your orders and to the instructions left by Baron Larrey, the coal-tar powder has been used in the hospitals of Milan, in which had been admitted men suffering from wounds, attended with mortification and hospital gangrene. The first applications of the remedy, either in powder or ointment, began on the 1st of August; the immediate results were most favorable, and the disinfecting power of the agent was distinctly observed in more than twenty cases of wounds attended by several surgeons. It has moreover been ascertained that, under the influence of this dressing, and of nutritious diet, the wounds, at first merely deodorized, soon changed for the better, and their aspect wonderfully improved.—*Champ. Journal.*

2. *Treatment of Indolent Ulcers by Vapor of Iodine.*

During the last three years nearly all the cases of indolent ulcers entered under our care to the U. S. Marine Hospital,

have been treated by the vapor of iodine. The result is very satisfactory in nearly all cases; more so, by far, than that obtained by any other single method. Its advantages are conceived to be these:

1. Cleanliness and facility of application.
2. Rapidity of cicatrization.
3. Destruction of the odor of the ulcer. Iodine acts as a disinfectant, like chlorine.

The manner of using it is as follows:

1. Dress the ulcer with simple cerate, spread on lint.
2. Take from one to four grains of iodine, according to the size and degree of indolence of the ulcer, folded in several layers of lint, and place it on the ulcer, over the first layer.
3. Cover this with a piece of oiled silk and tin foil, which should be large enough to extend beyond the edges of the ulcer. This is to prevent rapid vaporization, and it should be secured by a roller.

The warmth of the member speedily vaporizes the iodine, and a sensation of warmth is perceived by the patient on the ulcerated surface. If applied in too large quantity, or too directly on the surface, the iodine acts as an escharotic. Care is therefore required in this respect.—*N. A. Med. Chir. Rev.*

3. *Needles in the Stomach.* Treatment by M. BOUCHUT.

A little girl, whose case attracted notice from its singularity, applied at Mr. Bouchut's consultation, for the extraction from the abdominal walls of a needle she had swallowed three months before.

Many instances of the kind are to be met with in scientific records. In the *Dictionnaire des sciences médicales*, we read of chlorotic patients who, impelled by an unaccountable fancy, swallowed as many as 1500 pins, and died in a state of atrophy, their muscles bristling with these foreign bodies like so many pin-cushions. Needles sometimes penetrate into the skin by the same mechanism, by which an ear of rye creeps upward through a sleeve in which it has been inserted. This is chiefly observed in cases of hysteria and chlorosis, in which the integument has more or less lost its power of sensation, and is unconscious of the penetration of the foreign body. In the little girl who suggests the present remarks, the needle had been inadvertently swallowed, and the interesting feature of the case was the occurrence of diarrhoea while the needle remained in her system, and its continuance even subsequently to the removal of the implement, the cause of the intestinal

relaxation being obscured by the occurrence and perseverance of the symptom. It is not unimportant here to inquire what connection, if any, existed between the presence of the needle and the production of diarrhoea.

We have stated that the diarrhoea had followed almost immediately upon the introduction of the needle into the digestive organs, that it assumed a chronic form, and that the child had lost flesh. Mr. Bouchut was consulted as soon as a minute inflammatory tumor appeared upon the abdominal wall, and a small incision allowed him to discern the foreign body, which he seized with a common forceps and easily removed. The wound healed rapidly, but the diarrhoea nevertheless persisted. This circumstance of course suggested the idea that the intestinal relaxation was not accidental, and might perhaps be connected with tuberculosis; as, however, the patient did not cough, as no mesenteric tubercles were discernible, the idea was abandoned, and in the supposition that the looseness of the bowels was due to a local cause only, it became necessary to inquire whether it was catarrhal or organic. A common catarrhal disease is not usually of so long duration, but the secretion, as may be observed in fluxes of all description, irritates the parts it comes in contact with, and gradually brings on organic disease, thus giving rise to interminable chronic inflammations. In Mr. Bouchut's opinion, this explanation applied to the symptoms of the case under consideration.—*Championniere's Journal*.

4. Surgical Excerpts.

Applications in Acne.—When the affection is slight and recent, after removing all causes which seem to maintain it, we should always commence its treatment by stimulating, spirituous lotions, which may be employed tepid or even hot. When very slight, a large teaspoonful of the following solution, added to a glass of tepid water, may be applied night and morning: R. Hydr. bichlor. 1; alcohol, q. s.; aq. dest. 100 parts. In certain forms of acne, especially the punctuated and sebaceous, local astringents effect a certain cure. M. Ferrat especially recommends alum or peroxide of iron. R. Alum, 30 parts; aquæ, 300 parts. R. Ferri perox. half-a-part; axung, 30 parts. It will be better to commence with half these strengths, increasing them afterwards. The lotion may be applied night and morning, and the ointment on going to bed. In severer cases, protoiodide of mercury should be substituted for the iron, viz. protoid. half-a-part, and lard 30 parts. The dose of the pro-

toiodide may be afterwards doubled; and if the cure is long delayed, or imperfect, the bi-iodide must be substituted, employing from one to seven grains every evening. In intense acne we may commence with the bi-iodide.—*Bulletin de Thérap.* Tome lvii. p. 270.

Influence of Smoking in the Production of Cancer of the Lip.—M. Bouisson, of Montpellier, has recently stated that the great increase of this affection is due to the practice of smoking; and the late M. Roux attributed also to this the fact of his having met with a larger proportion of cancerous affections of the lips during the latter than during the former half of his prolonged surgical career. M. Fleury, of Clermont, is however, of a different opinion; for, deploring equally with M. Bouisson the pernicious practice of smoking, he doubts whether cancerous affections of the lips is one of its effects. Between 1845 and 1855, he has operated upon 86 patients, 71 being men, and 15 women, and not one of these being less than 43 years of age. They were all of the peasant class, chiefly from among the mountains of Puy-de-Dome and the vicinity, where smoking is almost wholly unpractised. It is a remarkable fact that the inhabitants of the surrounding plains, and of the towns, where smoking prevails much more, are almost completely free from the affection.—*Gazette Médicale*, No. 35.

Iodide of Ammonium in Syphilis.—As the result of several trials made by M. Gamberini, of Bologna, it is stated—1. That it is suitable in all cases in which iodide of potassium and sodium are employed. 2. It leads to a rapid cure. 3. The quantity given daily may be carried as high as from $\frac{1}{2}$ dr. to $\frac{1}{2}$ oz. and intolerance is rarely exhibited. 4. Employed in friction with olive-oil, it causes the disappearance of nocturnal syphilitic pains. 5. The signs of intolerance are a sense of burning in the throat and heat of the stomach; these rapidly disappearing on the suspension of the medicine for a couple of days. 6. Under the internal use of this medicine indurations consecutive to hard chancre disappear, as do also the indurated ganglionic pleiades in the groin. 7. Arthralgia, rheumatoid affections, periostitis, enlarged glands, and papulo-vesicular syphilide of the back, are the forms of syphilis which have best yielded to this drug.—*Ibid.*, p. 378.

Epidemic Catarrhal Orchitis.—When orchitis has occurred during the prevalence of mumps it has usually been considered as the result of metastatic action; but in a recent epidemic of catarrhal fever, described by M. Desbarreaux-Bernard, of Tou-

louse, to which the prevalence of mumps imparted a special character, this explanation would be at fault. For in several patients the affection of the testis appeared at once, without any preliminary affection of the parotid whatever. It came on during the catarrhal fever, the pain, however, being only slight, and the tumefaction assuming a globular—rather an ovoid form. Individuals of all ages were attacked, and several of these were patients in the hospital, suffering from or convalescent from various secret diseases.—*Ibid.*, p. 378.

Creosote in Panaris.—M. Turchetti states that as soon as the inhabitants of the province of Garfagnano perceive the first appearance of this painful affection, they apply to the finger a small piece of linen rag moistened in creosote. This is followed by intense pain which lasts nearly a quarter of an hour, after which the tumefaction and pain gradually subside, the course of the panaris having been cut short.—*Union Méd.* No. 135.

Remarkable Course of a Urinary Fistula.—A patient recently entered the St. Antoine Hospital, under M. Morel-Lavallée, suffering from stricture, and having several urinary fistulæ in one of his thighs. Not a drop of urine was discharged by the urethra, and no instrument could be introduced. Although the attempt at catheterism was made with great precaution, an intermittent paroxysm followed, giving rise to the death of the patient in spite of the administration of quinine. At the autopsy, a vesical fistula was found traversing the horizontal ramus of the pubis, a true bony canal, in fact, existing, communicating with the fistulous tracts of the thigh, and with the point once occupied by the prostate, this gland being entirely destroyed. It is probable that in this case there was primary disease of the bone, the bladder becoming attached to it. The case is probably unique, although the examples of balls perforating the ramus, penetrating the bladder, and thus giving rise to a fistula, bear some analogy to it.—*Union Méd.* No. 114.

Warm Bath in Burns.—Dr. Passavent, of Frankfort, has had an opportunity of observing this treatment in all the different degrees of burns. In the wounds of thirteen cases a permanent bath was used wherever it was applicable; to the wounds of the head, etc., warm fomentations were constantly applied; the water was kept at thirty-two degrees Réaum., and the bath continued until cicatrization took place. Pain soon ceased; the reaction was moderate; exfoliation of the dead

parts gradually took place; the wounds remained clean; in no case did purulent absorption occur. Dr. Passavent adds that this application softened, and rendered more extensible the cicatrices.

Application in Tumors of the Breast of a Doubtful Nature.

—Benign tumors of the breast so far simulate cancer sometimes that even experienced surgeons advise their extirpation. M. Chahrelly has recently published several cases of this description in the *Bordeaux Journal de Médecine*, in which a complete cure has been effected by applications of the following powder continued uninterruptedly during several months:—Powdered starch, 250 parts; powdered iodine, $\frac{1}{2}$ to 1 part; chlorhydrate of morphia, $\frac{1}{2}$ a part. Mix. The powder is to be applied upon a layer of wadding, which is to be kept *in situ* by a suspensory bandage.—*Bulletin de Thérap.* tome lvii. p. 412.

Cherry-Laurel Water in Burns.—M. Franchini states that he has found this application of great service, even in very severe burns, while, even when these have been of large extent, it has produced no ill effect. He combines eight parts with one hundred parts of gum syrup (a mixture of tragacanth mucilage and simple syrup), renewing the application every twelve hours, moistening the compress a few minutes before attempting to detach it.—*Ibid.*, tome lvii. p. 331.

Chloride of Sodium as an External Resolvent.—M. Ancelon affirms that chloride of sodium employed externally, whether in powder, or incorporated with lard or linseed oil, forms a most admirable resolvent of indurated lymphatic glands. Frictions made with a pomade composed of it will induce an eruption resembling variola, which proves of great use in pulmonary phthisis and in chronic affections of the alimentary canal.—*L'Union Méd.* No. 132.

The Actual Cautery in Cancer.—M. Sédillot, of Strasbourg, strongly recommends the use of the actual cautery in the removing of epithelial cancers; removing as early as possible (under chloroform) the healthy parts immediately surrounding the cancer.

Injection of Tincture of Aloes in Gleet.—M. Gamberini, of Bologna, states that in some cases in which other injections have failed he has derived great advantage from injecting tincture of aloes 14 parts diluted with 120 parts of water.—*Ibid.*, p. 426.

Formula in Mentagra.—As a local application, M. Richard employs the following solution, frequently applied, with good effect:—Sulph. of zinc, 16; sulph. of copper, 5; water, 500; and laurel-water, 15 parts.—*Presse Méd. Belge*, No. 25.

OBSTETRICS, &c.

1. *Tannin in Hemorrhagic Fungus of the Womb.* By M. BECQUEREL.

Among the various chronic inflammatory diseases of the womb, one has for some years given rise to animated controversy, and its treatment is still matter of debate: we allude to hemorrhagic inflammation, which seems to be connected with uterine fungus. Mr. Becquerel treats this disease with tannin, and as we have had an opportunity of seeing the remedy applied in Professor Nélaton's wards, we will briefly describe it, and at the same time reply to some of the objections which have been made to Mr. Récamier's method of abrasion. We have frequently spoken of this method; the following is the procedure preferred to it by Mr. Becquerel.

This gentleman prepares cylindrical sticks with a paste consisting of:

Tannin	4 parts
Gum	1 —
Bread crumb	q. s. to impart

flexibility to the mixture.

These cylinders are about 15 lines in length and 2 lines $\frac{1}{2}$ in diameter. In order to proceed to their application, it is in the first place requisite to expose the cervix with the speculum. A stick of tannin is then conveyed with a forceps into the os uteri, pushed into the cavity of the womb, and prevented from escaping by a lint ball impregnated with a concentrated solution of tannin. The cylinder softens, melts, and produces, as we have stated above, pseudo-membranous metritis. The lint pledget is removed at the expiration of twelve hours, and the tannin having melted away, requires no further notice. After three or four days, a fresh pencil is inserted, and a third, a fourth, or a fifth cylinder, is intro-

duced at similar intervals. The mucous membrane, thus modified by artificial morbid action, ceases to throw out granulations, and thus hemorrhage is checked. Mr. Becquerel has performed this operation above fifty times, and constantly the patients were cured after four or five applications, without any unpleasant symptoms having supervened.

Mr. Nélaton, being desirous of testing the value of a method of treatment which had yielded results so satisfactory in appearance, applied the tannin pencils in the cases of two women occupying beds No. 4 and 5 of his smaller wards. Both were suffering from obstinate hemorrhage, connected with a morbid condition of the uterine mucous membrane. In the two instances, the scoop was introduced into the womb, and in case No. 5 only were fungiform textures extracted with the instrument, a fact proving, in Mr. Nélaton's opinion, that shreds of membrane, improperly denominated fungoid, are not always, as has been stated, thus removed; and that, when no granulations are present, the scoop displays, on examination, naught but mucous secretion, or coagulated blood, without any resemblance with the vascular structure which constitutes the fungoid tissue. In these two cases the tannin stick was inserted, and the following is what we have learned of the consequences of the application:

The first result was a considerable amount of pain in the inferior part of the abdomen and the lumbar region. In one patient the suffering lasted from eight in the morning to two o'clock in the afternoon, and persisted until the next day. In both cases the bleeding was checked temporarily, but the results were not as satisfactory as the experiments of Mr. Becquerel.

2. *Mammary Abscess.*

Mammary abscess is seldom observed except during lactation. It may, however, occur in young unmarried women that the sebaceous follicles, of the skin of the breast become inflamed, and the irritation spreading to the circumambient cellular tissue, a genuine abscess of the mamma is the consequence. In three years, Mr. Nélaton has observed in his ward three cases of this description, and the last in a girl of fifteen; the abscess, of the size of a walnut, was opened, and puriform matter mixed with blood escaped through the incision. The dressing consisted in the insertion of a tent into the orifice and in poultices, and a complete cure was rapidly effected.

Mr. Nélaton here mentioned the singular lacteal collections observed in infants during the exfoliation of the cuticle. At

this period the breast becomes the seat of painful swelling and of a secretion in which the microscope has detected the constituents of milk. In general, the curious secretion, which we have on another occasion described in Mr. Natalis Guillot's clinical lectures, gives rise to no morbid symptoms, and is merely a natural physiological event. Sometimes, however, mammary abscess is induced, as in nurses, and by the same mechanism as in the latter. The obstruction of the galactophorous ducts occasions the incarceration of the milk, inflammation follows distension, and subsequently produces an abscess, with sometimes such extensive detachment of the skin as to lead to fatal results.

Mr. Nélaton related a case in point which he observed a month ago; the patient, a little girl aged ten days, presented coincidently with marked swelling of the mamma and secretion of a lacteous fluid, a vulvar discharge analogous to menstruation. Mr. Nélaton was not inclined to consider these concomitant symptoms as characteristic of premature sympathetic action between the mamma and the organs of generation. These sanguineous excretions have nothing in common with the catamenia, and moreover the swelling of the breast with the accompanying milky secretion are indiscriminately observed in both sexes in new born-infants.—*Champ. Jour.*

3. *Urethritis and Vaginitis. Solutions of Chloride of Zinc.*

The Gazette des Hôpitaux published, some months since, the results of a series of experiments instituted by Professor Legouest, of the Hospital Val-de-Grâce, on the value of chloride of zinc injections in the treatment of urethritis.

The use of chloride of zinc had been tried in 50 patients belonging to this physician's wards; of these cases of urethritis 21 were simple, 12 acute, 17 chronic. All these patients had injected, once every morning, a solution of chloride of zinc at 1-1000 for simple and acute urethritis and at 1-500 for chronic and obstinate cases. Each patient had retained the liquid injected a space of time varying from three to five minutes. These experiments proved: that injections of chloride of zinc of the above mentioned strength are not in general painful, that they rarely induce accidents; that they rapidly modify the discharge; that in the greater part of cases of acute urethritis they assuage inflammation and pain; finally that they succeed less perfectly in simple and benignant discharges than in acute or chronic urethritis.

In this last category especially, injections of chloride of zinc yielded Mr. Legouest really remarkable results.

We waited, before we noticed Mr. Legouest's remarks, for further confirmative facts, when the *Bulletin de Thérapeutique* informed us through one of its correspondents, Dr. Gaudriot, that this physician had recommended the medication alluded to twenty-five years since. Mr. Gaudriot has done better than moot a question of priority: he proves that solutions of chloride of zinc are not beneficial in urethral blennorrhagia only, but that they are likewise very efficacious in vaginitis. The following are Dr. Gaudriot's formulas for both these diseases:

Solution for Injections.

R. Liq. zinci chloridi,	24 to 36 min.
Aq. destillatæ,	3 oz.
Shake and filter.	

Two or three injections to be performed daily. The syringe to be used should be provided with a bulbous extremity, and a very small quantity of fluid should be employed, the disease in its incipient stage occupying the fossa navicularis.

For a Vaginal Suppository.

R. Liq. zinci chloridi,	5 min.
Morphiæ sulphatis,	$\frac{1}{2}$ gr.

Thicken to a proper consistency with 2 dr. of the following:

R. Mucilaginis acaciæ,	6 parts.
Sacchari pulveris,	5 do.
Amyli,	3 do.

Mix with care and mould a hollow suppository not more than one line in thickness. One suppository is inserted every day, and subsequently every alternate day.

4. *Obstetrical Excerpts.*

Infusion of the Leaves of Rhamnus Alaternus as an Anti-galactic.—The editor of the "*Florilégio Medico di Roma*" reports several cases of lying-in women, who, from different reasons, could not put their children to the breast, or had to cease nursing them, and used the infusion of the leaves of *rhamnus alaternus* for the purpose of stopping the secretion of

milk. In all of them the secretion was quickly diminished, the turgid state of the breasts rapidly reduced, and the patients thus saved the trouble arising from this condition, and the inflammation so often following it. He adds, that he found it impossible to discover the least disturbance in the other secretions and excretions of the women to whom he had administered the remedy. He is therefore inclined to believe that the *rhamnus alaternus* exercises a specific action upon the mammary glands; and he proposes to apply this remedy also to other swellings of these glands. The *rhamnus alaternus* is an ever-green shrub, which is cultivated in gardens as an ornament, and is known in Italy by the name of "Olivelle," on account of the configuration of its leaves. It is given in infusion, the dose being five to six leaves to two pints of boiling water.—*Zeitschrift für Wundärzte*, etc., 1859, xii. 1.

On the Cicatrix-like Streaks on the Skin of the Abdomen, Breasts and Thighs of Women that are pregnant or have children. By L. ELSBERG, M. D. of New York.—Opinions as to the time of appearance, frequency, and other peculiarities, and medico-legal importance of these streaks, are so unsettled and conflicting, that we gladly hail the excellent review of the subject by CREDE, of Berlin, one of the editors of the "*Monatsschrift für Geburtskunde und Frauenkrankheiten*." We have prepared for our readers the following propositions which he has established: (*Monatsschr.*, &c., Nov., 1859, p. 323 et seq.)

1. The streaks on the abdomen more or less extensively exist in the great majority of pregnant females. They appear but very seldom, however, during the first half of pregnancy—frequently not until the last month, or the last but one.

2. Soon after delivery they change in appearance, becoming gradually less evident, unless the skin is made tense, but never entirely disappear.

3. In some cases they do not appear during pregnancy, and sometimes no trace of them can be found after repeated pregnancies.

4. Sometimes they appear for the first time at the second or third pregnancy, or else new streaks are added to the old.

5. They may make their appearance, also, without the existence of pregnancy—in consequence of diseases producing a rapid and considerable extension of the skin, (especially in dropsy, therefore.)

6. The quite similar streaks on the breasts, and the anterior surface of the thighs, occasionally, also, on other parts of the

body, as the buttocks, calves of the legs, etc., merit the same attention as those on the abdomen.

Tannin Crayons in Affections of the Uterus.—M. Becquerel finds these of great service in affections of the cervix uteri, being advantageous substitutes for intra-uterine injections. They are formed of tannin 4, and gum tragacanth 1 part, mixed up with crumb of bread. They are about one-sixth of an inch in diameter, and an inch long, and are passed, by means of a forceps and speculum, through the os uteri into the cavity of the uterus, in which they are kept by means of charpie, moistened with a concentrated solution of tannin. The crayon softens and dissolves; and at the end of twelve hours the charpie is withdrawn by means of a thread attached to it. A new crayon is introduced every third or fourth day, and after a month's treatment the fungosities of the mucous membrane gradually disappear, and hæmorrhage ceases.—*Bull. de Thérap.*, t. lviii., p. 365.

The Induction of Premature Labor Authorized at Rome.—Professor Finizio, of the Obstetric Clinic of Naples, having received into the Maternity a rickety, deformed girl, about seven months gone with child, in whom the internal pelvimeter only indicated an antero-posterior diameter of three inches at the inlet of the pelvis, and a coccy-pubic diameter of two inches, induced premature labor by means of uterine douches. The operation was quite successful both for mother and child; but the case having made much noise in Naples and formed the subject of the most injurious commentaries in the papers, Professor Finizio laid the circumstances before the metropolitan archbishop, who referred the case to the Sacred Penitentiary at Rome. The following was the decision of the sacred body: "*Si intelligatur partus immaturi qui prævenit ordinarium naturæ cursum, ita tamen ut fœtus eam maturitatem absecutus fuerit, ut in lucem editus vivere possit, affirmative. Cardinal Castracano.*" This decision, it will be seen, only applies to a child having attained the age of viability. The really thorny question of abortion is, therefore, reserved, or rather, it would appear from the care taken to separate it, resolved negatively.

Duration of Pregnancy. By Dr. CASPER.—In the Gazette des Hôpitaux we find an interesting summary of the opinions of Dr. Casper, professor of medical jurisprudence at the University of Berlin, regarding protracted gestation. Dr. Casper considers illegitimate, all births which take place after

300 days. But he introduces a novel mode of computation, which would seem likely to reconcile many apparent discrepancies. Cederschjæld was the first to remark that the intervals between the menstrual periods vary according to the peculiar organization of females; thus the menses most generally recur every 28 days; but 20 or 30 days are not unusually observed between the catamenial epochs; in the first instance, pregnancy would last 28×10 , i. e., 280 days, in the second 290, and in the third 300 days. To illustrate this position, several cases are adduced, in which ten lunar months, varying from 275 to 300 days, according to the ascertained duration of the catamenial interval, elapsed between insemination and parturition.

Digitaline in Puerperal Fever. By Dr. SERRE.—In one of the late sessions of the Académie de Médecine of Paris, Dr. Serre communicated an elaborate treatise on the treatment of child-bed fever, in which he extols the efficacy of digitaline in this affection. He administered one granule of the preparation "digitaline," manufactured by Homolle and Quevenne, every four, five, or six hours. He reports nine cases treated in this manner, in eight of which the remedy acted very favorably, although the disease had made already considerable progress in some of them. The principal effect of it consists in diminution of the frequency of the pulse and of respiration, and a simultaneous amelioration of all the other symptoms. The efficacy of digitaline is, according to his statement, superior to that of quinine, which has been recently recommended, and produces a similar effect.—(*Gazette des Hôpît.*, 1859, 50.)

The Influence of Cohabitation in the Transmission of Phthisis.—M. Brouchon concludes an interesting memoir upon this subject with the following propositions:—1. Pulmonary phthisis may become communicated in the course of time from individual to individual under the influence of cohabitation, and the consequent intimate relations—a proposition equally supported by reasoning, and by facts. 2. The transmission is usually operated from the older to the younger subject. 3. In the great majority of cases it takes place from the man to the woman. 4. It is to be feared in proportion as the subject exposed to it manifests a pre-disposition to the disease. 5. The influences which contribute to the result are identity of hygienic conditions, frequent absorption of morbid exhalations from the diseased subject, and fecundation by the latter. *Revue Médicale*, 1859, tome ii. p. 88.

A Spanish Cure for Nymphomania.—A young woman of high position having terminated a brilliant education at a convent in Saragossa, was seized, after romance reading, with nymphomania. M. Ester, the physician, believing that acting upon the imagination of the patient was the only effectual mode of cure, had her suddenly and without explanation conveyed to the Venereal Hospital. She was there brought into the presence of a woman covered with syphilitic ulcers, and in the most deplorable state; and the sufferings, regrets, and imprecations she listened to produced so vivid an impression upon the girl, that she at once returned to chaste ideas. She has since married, had children, and remained a model of grace and virtue.—*Ibid.* p. 429.

BIBLIOGRAPHICAL RECORD.

- I. *Lectures on Surgical Pathology*, by JAMES PAGET, F. R. S. Second American Edition. Philadelphia: Lindsay & Blackiston. 1860.

It is with pleasure we welcome a new edition of this great work on Surgical Pathology. During the six years which have elapsed since the first edition was issued by the American press, the profession generally in this country have become familiar with it, and have fully appreciated both the novelty and the force of the views advocated. It cannot now be said, either in England or in this country, as applicable to its author, that "the world knows nothing of its greatest men;" for, indeed, everywhere in the medical world he is regarded as the expounder of sound views of surgical pathology, founded, not upon theories formed without facts by inventive genius, but upon the close and careful observation of the many valuable specimens in the cabinet of the Pathological Museum of the Royal College of Surgeons, made with the aid of the advanced state of animal chemistry and the use of the microscope as applied to

pathological histology. Everett remarked with great truth, that men of genius were not always men of usefulness. Such has been sadly the case with us; for they have kept back the progress of science by their unwillingness to confine themselves to facts and to legitimate deductions from them. On this account, independently of the intrinsic value of this book, it is of great service to the profession, by demonstrating how genius and brilliancy of the highest order may be properly and usefully directed in studying thoroughly the facts as they present themselves, and then, in the true spirit of Baconian philosophy, drawing the conclusions.

As tempted as we are to go over in review the whole of this work, every chapter of which contains so much food for thought, to which we would like to give expression, we must forbear, in noticing this new edition, doing more than to speak of one or two of the prominent views, and the progress they have made in unsettling those formerly entertained. If Paget had never written any more than his first lectures on healthy nutrition, we would have been grateful to him. His demonstration of the exactness of assimilation accomplished by the formative process in health, and the reparative action in disease, where the normal structure has been changed, has had its effect in modifying the over-active practice of those who were too much disposed to interfere unnecessarily. But still more in this respect has our author's influence been happy in the promulgation of his views of degeneration of tissues, especially of "fatty degeneration," which, ever since Mr. Gulliver's discovery of the true nature of artheromatous deposits, has been so thoroughly studied by Rokitanaky, Virchow, Lebert, Bennett, and others. But by no one has the whole subject, in all its bearings, been so investigated as by Paget, not only, as he says, "because of its once great importance in pathology; for there is scarcely a natural structure or a product of disease in which it may not occur; but for the general doctrine of defective nutrition. The whole history of fatty degenerations concur to prove that they are the result of defect, not of disease, but of the nutritive process." More particularly is this the case

from the natural changes incident upon old age and senile infirmities.

We are all aware of the atrophy of all organs of animal life as their use is more dispensed with; so, as old age advances and we employ less the various tissues and organs, they become shrivelled and dried up. This is one of the characteristics of the appearance of old people, and yet we often meet with persons in advanced life who suffer from excessive obesity; nor is this confined to the largest of adipose tissue about the muscles, but you find accumulation of fat about the internal organs, and fatty degeneration of their tissue itself, and with all this, yet true atrophy—"bulk with imperfect texture—there is fat laid between and even within the muscular fibres; fat about and in the fibres of the heart, in the kidneys and all the vessels; their bones are so greasy that no art can clean them; and they are apt to die through fatty degeneration of some important part, such as the heart, the minute cerebral blood-vessels, &c. The defect of all these tissues is defect of quality."

How vastly the laws of fatty degeneration have modified the views of the medical world in pathology, and thus directly in practice, we see from the valuable works it has brought out, such as Dr. Todd's work on cerebral diseases, Dr. Howland on softening of the brain, M. Durand-Fardel on diseases of old age, Dr. George Johnson's great work on urinary diseases, showing Bright's disease to be in most cases atrophy together with fatty degeneration of the structure of the kidney. Will Doctors Watson and Allison admit that all these discoveries have modified our views of treatment? Or perhaps they will again shelter themselves behind the statement that not our views of the nature of their disease have been modified, but their type has changed!

We find no additions in this edition of Paget to the former text. We had hoped to find his views of the effect of alcohol in producing fatty degeneration. It is an admitted fact, and yet the probable fatty degeneration of the minute vessels of the brain producing the frequent deaths of drunkards by apoplexy, has not been sufficiently investigated. It is ordinarily

imputed to over-stimulation of the brain with alcohol—nervous matter being supposed to have a peculiar affinity with alcohol. In this connection, we beg to quote from an article in the October number of the "British and Foreign Medico-Chirurgical Review," a few remarks on the mode in which alcohol produces fatty degeneration. After stating that alcohol is absorbed as such from the stomach into the blood, it proceeds to say that "part of it is eliminated as alcohol by the lungs, by the liver, and by the kidneys. Another portion is decomposed, its hydrogen entering voraciously, as it were, into combination with oxygen to form water, which with acetic acid having been produced, is followed by the formation of carbonic acid and water. The result of this perversion of the oxygen is, that not only is the absolute quantity, but the relative proportion of carbonic acid exhaled at the lungs diminished, and less urea excreted by the kidneys than is proper, but the blood remains charged with unmetamorphosed and unburnt-up matter, or containing 30 per cent. more of carbon beyond an amount which is healthy. The quantity of fatty matter thus made to accumulate in the blood is sometimes so great as, according to creditable writers, to give this fluid an oily or milky appearance. Lecanu is said to have found as much as eleven per cent. of fat in the blood. * * * More effete matter awaits change and removal, and yet, though more oxygen goes into the system, less carbonic acid comes out of it, the voracious alcohol seizing hold of all the former it can grasp. The result is, that a peculiar dyscrasia is produced, having close relations, in its overt form, to the whole tribe of 'fatty degenerations.'"

Even in giving a passing notice of a new edition of Dr. Paget's chef d'œuvre, we would be doing him injustice if we did not allude to his eleventh lecture on the "repair of fractures," containing, as it does, his views in regard to the formation of "provisional callus," which have attracted both much attention and great opposition from certain quarters. Nor is it to be wondered at that his positive statements, so completely upsetting the old views in regard to union of fractures, should not be acceptable. None of us like to have the decided

impressions of our education upturned so unmercifully. After describing the process of repair with an ensheathing callus, he says: "It is usual in animals, but in man I have never seen its occurrence as a natural process in any bones but the ribs. In these it may be traced as perfectly as in instances of repaired fractures of long bones in the rabbit and dog. Sometimes, indeed, a similar process occurs in other human bones. I have seen it in the clavicle and humerus; but in both these cases the more proper mode of repair had been disturbed by constant movement of the parts, and in the humerus the process had manifest signs of exaggeration and disease. The clavicle was broken twelve weeks before death; but the fracture was not detected, and the fragments were allowed to move unrestrained. The humerus was taken from a man who died some weeks after the fracture, and whose arm had for several days after the injury been the seat of severe spasms." "The normal mode of repair in the fractures of human bones is that which is accomplished by 'intermediate callus.' The principal features of difference between it and by 'provisional callus' are, (1) that the reparative material or callus is placed chiefly or only between the fragments, not around them; (2) that, when ossified, it is not a provisional but a permanent bond of union for them; (3) that the part of it which is external to the wall of the bone is not exclusively, or even as if with preference, placed between the bone and periosteum, but rather in the tissue of the periosteum, or indifferently either in it, beneath it, or external to it. When the fragments are placed in close apposition and correspondence, they may, I believe, be joined by immediate union; but if this does not happen, a thin layer of reparative material is deposited between them; it does not, in any direction, exceed the extent of the fracture; neither does it, in more than a trivial degree, occupy the medullary canal; but being inlaid between the fragments, and these ossifying, it restores their continuity. The process may be compared with that of union by primary adhesion."

In these simple words our author states his views in regard to the union of fractures—he proceeds to demonstrate the

reparative material as always an intermediate bond of union which is inlaid between the fragments, and when formed in largest quantities is only enough to smooth the chief irregularities and to fill up the interspaces and angles. And here he shows how beautifully this new material is deposited to strengthen the weakest parts, adapting it thoroughly to its future functions. Naturally it may be asked, why is this difference between the union of bones in animals and in the human subject? Dr. Paget's explanation is so clear and satisfactory that we give it in his own words: "I believe it must be ascribed, principally, to two causes, namely, the quietude in which fractures in our bones are maintained, and the naturally greater tendency to the production of new bone which animals always manifest. Even independently of surgery, in the case of fractures of the lower extremity, the human mode of progression almost compels a patient to take rest; and in fractures of the upper extremity, the circumstances of human life and society permit him to do so far more than other animals can. The whole process is, therefore, more quietly conducted; and, so we may say, there is comparatively little need of the strength which the formation of provisional callus would give a broken limb." "The exceptions to the rule of difference in the repair of human bones and those of animals, confirm it as thus explained, for they are found in the ribs, which are certainly never kept at rest during all the time necessary for repair after fracture, and in bones of which, from various causes, the repose of the fragments has been disturbed, or which have been the seats of disease, with inflammatory deposit, during or subsequent to the reparative process." "The comparative restlessness of animals is, however, I think, not alone sufficient to account for all the difference in the processes. The remainder may be ascribed to their greater tendency, in all circumstances, to the formation of new bone. Not in fractures alone, but in necrosis this is shown, &c."

We would not be correct were we to state that these views have been universally adopted—but we can with safety state that such is generally the case. The great objection urged

against them has been that the ensheathing callus can often be felt during life; but as Mr. Paget remarks, it is deception, and what is felt is either thickening and induration of the soft parts around the fracture; or by the two overlapping ends of the fragments being grasped at once; or what is still more rarely met with, by new bone accumulated about the fragments in consequence of inflammation. How often it is produced by the overlapping of the fragments in oblique fractures is shown to an extent beyond our previous knowledge of Dr. Frank Hamilton in his recent treatise on fractures. We can all recall cases where the two fragments were closely adapted, and where healing took place without any external callus whatever. Two years since an important suit in Baltimore for libel in a case of alleged mal-practice turned upon the truth of Mr. Paget's views. A patient accused in the public papers his surgeon of putting his leg into a fracture apparatus, for six weeks, when there was no fracture, for the purpose of obtaining the fee. His pretext for the charge was that, at the end of his confinement to his bed, there was no evidence of the presence of any provisional callus. Thus the perfection of the surgeon's art was made an excuse for assaulting his reputation. The testimony of the different surgeons varied according to their accepting the old views or Paget's; but an intelligent jury appreciated the latter, and granted a verdict of ten thousand dollars to the libeled surgeon.

There are many other chapters we might call attention to, but we have already exceeded our limits. We would, however, be doing injustice to our own feelings and to those of the profession at large, were we not to thank Mr. Paget for the evidence he has given us throughout his work of the value of the microscope in investigating Pathological Anatomy. There are so many men, even of those educated within a few years, who are disposed to look upon the instrument as a costly toy for the enthusiastic young pathologist to amuse himself with, and pass his unemployed time in looking at a few crystals found in decomposed urine, that it is cheering to find a man of our author's age and standing using it as a necessary accessory.

Without its habitual employment by him in every step of his researches, from those of healthy nutrition, through all the abnormal transformations of tissue and classification of tumors, to the minute structure of cancer, tubercle, callus, glands, &c., we could not have had the number of satisfactory scientific facts with which he has furnished us—indeed, without it, his great work would have been of comparatively but little value.

II. *Transactions of the American Medical Association, at its meeting held in Louisville, Ky., May, 1859. Volume XII.*

The faithful Publishing Committee of the Association (how few of the committees deserve the epithet) has laid the twelfth volume of the Transactions before the public with more than ordinary dispatch, and their work is deserving of commendation alike for its accuracy of typography and general neatness of finish.

Always an earnest friend of this Association, and recognizing its conservative influence upon our profession, we have never been one of those who preferred to point out its failures, rather than to dilate upon the usefulness of its results. The warmest advocate of the Association, however, must confess, that it fails in each annual reunion to equal, much less excel, its efforts of the preceding year. Its committees have, one after another, been found wanting, until, as in the present instance, even the standing committees failed in their duty, and we have no report on the present condition of medical literature or education in the United States.

Another ominous prognostic may be noticed in the refusal of the prize to any of the applicants; for surely there must be apathy among *forty thousand* physicians, if an essay coming up to the moderate standard heretofore assumed by the Association could not have been prepared for the occasion.

Need we add, that each returning year shews a smaller

attendance of the profession upon this their national congress, and each year—most vital of all—the volume of the Transactions loses in interest and value.

These facts make us disposed to think seriously upon the course to be pursued hereafter by all who wish to perpetuate this important organization, and with the hope of throwing out suggestions which may prove useful at the coming meeting, we take this opportunity to express our opinions on this question. We may reasonably expect to meet many of the leading men of the country at New Haven in June, and we anticipate that some modifications of the existing arrangements will be discussed.

We regard the two vital defects in the present system of management to be as follows: 1st. The Association has never been a scientific working body, but a debating society, confining itself to the discussions of constitutional and ethical questions, attempting to pull down or build up colleges, or to execute impracticable schemes of reform, and generally concluding with a grand jollification which promoted mirth, but gave not a page to the forthcoming volume.

If reports were offered, their titles only were read, and they were consigned to the hands of the Publishing Committee, and thus, instead of feeling the necessity for preparing succinct and condensed papers, of a character likely to be read easily and appreciated properly by the members, we see, as exemplified in the present volume, a contribution occupying more than *four hundred pages*, which is avowed by the author to be only the first of *six* volumes of equal size, so that we may anticipate in time to witness a monograph on malarial fever of not less than twenty-four hundred pages, published under the auspices and at the cost of the Association.

We do not intend to say that this and other papers heretofore appearing in the annual volume may not be valuable and original in their design and execution, but we think them not legitimately within the scope of the Association, and calculated to detract from its practical usefulness to the profession. We do not desire to publish huge volumes for authors, but the

Transactions of the Association prepared especially for and read and discussed by the members at the stated gatherings, emended, improved and *abbreviated* before appearing in print, as the embodiment of their conclusions.

Let us, then, as the best remedy for this condition of things, carry into prompt and zealous execution the most important suggestion of the last meeting, viz. to divide the Association into *sections*, and let all the members go to work, each one in his own sphere, to add even a mite to the common fund. Let them meet early and often, elaborate with care and industry those materials proper to their department, appoint a committee to arrange their contributions to the coming volume clearly and to the best advantage, and the result *must* be good.

Again, these sections should appoint all the committees, except the standing committees, and the chairman, at least, of each should be present and *volunteer* to hold that responsible position, which should be held as a sacred trust, not to be neglected or slurred over.

2nd. The Association meets too often, and wanders about too much. It should preserve its dignity by only appearing triennially, and at some convenient point. Whatever good might have resulted from their travels heretofore, has now been effected. We have broken bread with the four corners of the Confederacy, and eaten and drunk to repletion; let's to our work.

So much for our own ideas as to the course best calculated to develop the resources of the profession, and to increase the effectiveness of the Association, and without now going into details, which would be out of place and indeed will require the greatest care and study to perfect, if such a plan as the one suggested be adopted, we will, in a few words, allude to the twelfth volume from which we have unexpectedly wandered.

There are, as we have said, neither reports from the Committees on Medical Education or Medical Literature, and no "Prize Essay." Four papers were offered for this honor; but neither one deserved it. So say the committee.

The gem of this volume is a report from California, prepared

by Dr. Thomas M. Logan of Sacramento. We think this the best paper on medical topography yet presented to the Association, especially when we remember the many disadvantages naturally to be overcome in a country just reclaimed from the desert, whose geography and climatic characteristics are almost entirely unexplored, and with a population not disposed, as yet, to spend their time in scientific pursuits.

The author confesses that his paper cannot be considered as anything but an unfinished sketch of this wonderful country, and promises to perfect the subject at a future time. Hence we cannot attempt to draw deductions from his facts and observations. But, by giving careful thermometrical, barometrical and hygrometrical observations, much valuable information is stored away for future analysis, and his neat, well-arranged maps and tables add to the value of his labors.

A short report from the Committees on Registration Reports, Government Meteorological Reports and on Criminal Abortion, fill but a small space in the Transactions, and leave ample room for the concluding paper, which has in part, at least, already appeared in a Medical journal, and having been consigned to the Committee of Publication, was then withdrawn and offered in competition for the prize, and eventually appears filling up two-thirds of the volume, under the head of Observations on some of the Physical, Chemical, Physiological and Pathological Phenomena of Malarial Fever, by Joseph Jones, A. M., M. D., &c., &c.

We have already expressed our objections to the publication of such papers as this, under the title of Transactions of the Association, and therefore we decline to review it at this time as a part of the subject in hand. An attempt to reach at the causes of disease by such a route as that indicated by the learned and laborious author demands more than a mere cursory notice. We shall, therefore, postpone its consideration for the present.

We will conclude by remarking, that the retiring President, DR. LINDSLEY, proposes in his address several alterations in the method of transacting business which we approve of in

the main, but there is one suggestion unwise and tending to produce much mischief, if it should be adopted, and we will here allude to it for a moment.

It is known that the Nominating Committee, composed of one delegate from each State, has heretofore arranged all the business and appointed nearly all the committees for the ensuing year—in truth, is “the Association.” Dr. Lindsley proposes that hereafter each delegate vote, according to the number of members present from his own State. If he is alone, he votes once; if there are a hundred present, he votes 100.

This proposition would place the Nominating Committee always in the hands of the delegation from the State *in which the meeting was held*, and thus place the Association in the power of *one man*. As for instance, at the Louisville meeting, the representative from Kentucky would have had 71 votes, and would have ruled every Eastern, Middle and Southern State, from Maine to Louisiana, including even Michigan, Iowa and Wisconsin!

The President says that the method of voting by States is in “violation of the fundamental principles of representative government;” but he might remember, that when the election of President of this *country* devolves upon Congress, that this precise mode is adopted—little Delaware standing there equal with New York—a wise and conservative constitutional provision which may yet save this Union. We hope, therefore, that this proposition will not be favorably regarded by the Association.

EDITORIAL AND MISCELLANEOUS.

SALUTATORY.

THE Associate Editor, in assuming the duties of conducting this Journal, thinks it fair to its patrons to inform them that it is entirely at the request of others, and for the sake of the work itself. The intrinsic merits of the Journal must depend upon the profession at large, within the limits of its circulation, and upon those who feel an interest in its welfare. It is necessary that every enterprise should have a central point for distribution, and a nominal head. But such is the catholicity of Science, that it is to be hoped each medical gentleman will consider it as much his organ for the dissemination of all useful information relative to our common profession as if he himself appeared as Editor. It is indeed the Editor's duty only to separate the pseudo from the real, as far as possible, and to give each true medical philosopher a voice amongst his brethren.

It is the want of such an enterprise in this particular locality, and at this juncture, which has actuated the Associate Editor to this labor. If we can succeed in creating *one* thing in which the medical men of a circumscribed locality take a common interest, it is the beginning of a system of mutual assistance. No calling or occupation demands a greater reciprocity of knowledge or diffusion of exact points of experience, than the medical profession. Separate one mind from the intercourse and observation of others, and empiricism, with all its multiform varieties, must result. The principle upon which the "practice of the healing art" is founded are as determinate as those of any other science. That those principles are perfect we do not contend, and that their application is difficult, according to the variety of circumstances in which mankind is found, is admitted by us all. Therefore it is that

the experience of medical observers within certain circumscribed boundaries is valuable to those of the same profession within those boundaries. Points of practice, for example, found useful far down the Rhine, amidst that laborious hive of professional thinkers, might not be found practically suitable here. But if it is true that a work is worth its cost if only for *one* reference, or suggestion, surely, as editors, we cannot despair of usefulness in offering to our readers twelve times ninety pages per annum of selected medical matter. "In the meantime let no one be alarmed at the multitude of particulars, but rather inclined to hope on that very account." "One point of our design is, that everything should be set out as openly and clearly as possible. The order and method of the work, therefore, shall first be explained."* Our arrangements are such that we hope to give every advantage which can be offered by any other Journal, viz., an appreciative review of all the medical works issued from the leading publishing houses in this country—a selected periscope of foreign practice, and the result of the experience of our most zealous physicians. It is not the intention of any Journal to do more than this. Those who take the trouble to prepare an article, naturally desire that it should be circulated as extensively as possible. If this enterprise is sustained, the end thus sought is here obtained.

The Journal already numbers among its contributors gentlemen from both branches of the Government service, and has a considerable circulation amongst them, with a promise of greater. It is proposed to conduct it in so fair a spirit of scientific generalization, that it will be welcomed as an unbiassed exponent of the progress of knowledge in our speciality.

The form of the Journal is so convenient, and the printing so fair, that it can be read by the city or country practitioner in his carriage, and thus pleasantly beguile the tedium of many a monotonous ride. True, we hear it frequently asserted, that the errors of journalism are so great that the communities where none are found are more to be commended for their

* Lord Verulam.

taste than others for their misdirected industry. It is to be feared that those who cavil thus are they who will not lend a helping hand to the proper recording of the improvements of science. That there is often a hasty conclusion, or a too speedy generalization, published by those more enthusiastic than philosophically patient, is true; but the general tone of all the medical journals now published, will bear a most honorable comparison with those of any other science. Their unwavering, steady devotion to the cause of ameliorating the sufferings of humanity, and advancing this object to a more perfect science, is highly commendable. Their standard of morality is ever of the highest order. How favorably will this compare with the serials of general literature. What examples do they offer in calmness, patience, philosophic induction, and, we might add, in christian spirit, to the personal asperity of theological controversies.

Those who complain that they are tired of trying the suggestions contained in journals, should investigate more closely the details of their experiments.

Pathological conditions are strictly the results of circumstances. All the details of these circumstances must enter into a comprehensive etiology, and be pertinent to a physiological treatment. It is vain, therefore, to make assertions which are more the offspring of disappointments than of careful and enlarged investigations. Journalism is a necessary vehicle of the knowledge of the time, and those accustomed to the "new learning in medicine" must acknowledge its general utility. No one journal can be conducted to the satisfaction of all—that is not to be expected—but the general tone of all the literature now accepted as authority by members of the medical profession, is elevating alike to morals and intellect.

These views will find a ready response in the hearts of physicians everywhere. To see the members of our profession, throughout two sister States, such as we assume to be, unite for a common object, is not a scene uncurtained to the world in every generation. The responsibility, it is true, rests

most heavily with those whose names appear as Editors; and a failure of the enterprise will be nominally their failure; but yet the indulgent and intelligent will know that it is not so in reality. The combination is not intended for the edification and improvement of our own communities alone, but whatever is good amongst us we can hope, through this organ, to spread broadcast over the whole planet. To be, again, industrious producers in a field where we have already been too long idle, *should* be a stimulus, prompt and diffusible amongst us.

**THE RETURN OF SOUTHERN MEDICAL STUDENTS FROM NORTHERN
MEDICAL COLLEGES.**

On Saturday, the 17th of December last, the Faculty of the Medical College of Virginia were startled by repeated telegraphs received from students in Philadelphia, (as also from Drs. F. E. Lockett and H. H. McGuire, who have been engaged there in conducting private examinations with great success,) asking permission to enter the College and finish the session without paying a second time for their tickets.

This was the *first* intimation given here, by the Southern portion of the Philadelphia class, of its intention to return to Southern schools to terminate their studies. The Faculty of the Medical College of Virginia, and the Faculties of the Charleston, Augusta, Nashville and New Orleans schools agreed to admit these gentlemen free of any additional charge. The result was, that on Wednesday, the 21st, *two hundred and forty-four* students came on to Richmond from Philadelphia, and since that period probably one hundred have passed through to take up their studies farther South. One hundred and forty have matriculated at the Medical College of Virginia, and are now diligently engaged in attendance on the lectures and examinations of the course.

We take from our valued cotemporary, the North American Medico-Chirurgical Review, edited by Professor Gross, of the

Jefferson Medical College, the temperate and accurate statement of this unexpected movement, found below :

EXODUS OF SOUTHERN MEDICAL STUDENTS.—For some time past much excitement has existed among some of the Southern medical students of this city, growing out, as has been alleged, of the Harper's Ferry movement. It had been vaguely rumored that a committee of thirty had been appointed early in the last month to obtain signatures to a pledge of secession; and on Tuesday morning, December twentieth, a final meeting was held at the Assembly Building rooms, preparatory to the exodus of the disaffected members of the classes of the different schools. The president of the meeting, we learn, was Mr. Lee, of Alabama, assisted by several vice-presidents and secretaries. Addresses were made on the occasion, among others, by Dr. F. E. Luckett and Dr. H. H. McGuire; and letters and telegraphic dispatches read from Governor Wise, of Virginia, and the deans of the medical colleges of Richmond, Charleston, Savannah, Augusta, New Orleans, and Nashville, tendering sympathy, and a cordial welcome to such secessionists as might feel inclined to resort to those institutions. The meeting is reported to have been conducted with great decorum. The time fixed upon for their departure from the city was Wednesday night, December 21st, with free passes provided by the Fredericksburg and Richmond Railroad, through Drs. Luckett and McGuire, over the whole route,* and one thousand dollars, said to have been sent from Virginia, to defray incidental expenses.

The number of students that left has been variously estimated at from one to two hundred, a large majority of whom were matriculates of the Jefferson College. It is understood that they were joined at the depot by a small number of Southern students from the University of New York. The exodus was avowedly conducted by Dr. Luckett and Dr. McGuire, the former of whom had been intrusted with the railroad passes and the disbursement of the money. It is proper to add that these gentlemen had a large quizzing class, consisting of nearly two hundred Southern students, and generally known as the "Southern quizzing class." Of this class the great majority have left; and of the whole number of secessionists, one hundred, it is said, had previously been pledged to the Medical College at Richmond.

The manner in which the secessionists were received at

* These tickets were *not* free, but paid for by the Richmond City Council.

Richmond will appear by the following dispatch, copied from one of the daily journals of this city :

Reception of the Southern Medical Students at Richmond, Va.

RICHMOND, VA., December 22.

The seceding medical students from Philadelphia arrived here to-day, and were received by the Faculty and students of the Medical College, the Governor's Guard, and an immense throng of citizens. The procession marched to the Governor's mansion, where the students were addressed by Governor Wise, and afterwards by Professor Gibson, at the college. A dinner was then partaken of at the Columbian Hotel.

The students were received with great enthusiasm by our citizens, and as the procession passed through the streets the shouts of the men were deafening, while the ladies manifested their delight by the waving of their handkerchiefs.

The objects of the secessionists are best explained in the language of the preamble and resolutions adopted at the meeting at the Assembly Building rooms, on the 20th instant:

Whereas, We have left our homes and congregated in this city, with a view to prosecute our medical studies; and having become fully convinced that we have erred in taking this step: that our means should have been expended, and our protection afforded to the maintenance and advancement of institutions existing in our own sections, and fostered by our own people:

Resolved, That in a body, or as many as approve of the act, we secede from the institutions in which we have severally matriculated, return to the South, and herein pledge ourselves to devote our future lives and best efforts to the protection of our common rights and the promotion of our common interests.

Resolved, That in taking this step, we disclaim any personal animosities, and deprecate any political agitation.

Resolved, That we tender our grateful acknowledgments and heartfelt thanks to the Hon. Henry A. Wise, Governor of Virginia; Dr. L. S. Joynes, Dean of the Virginia Medical College, at Richmond; Henry R. Frost, Dean of the Medical Department of the University of South Carolina; to President Robinson, of the Philadelphia, Wilmington, and Baltimore Railroad, and all others who have extended to us the substantial encouragement and aid so essential to the furtherance and successful accomplishment of our enterprise.

Resolved, That we extend a cordial invitation, and will cheerfully welcome in the South, any Northern student who will subscribe to the previous resolutions.

Resolved, That a copy of these proceedings be sent to all Northern medical colleges, for the benefit of Southern students who may have matriculated in them.

Resolved, That the Southern papers generally, be requested to publish the proceedings of this convention.

We have given the above statements of this proceeding as they have been communicated to us, as matters of interest to the medical profession of the United States in all time to come. As faithful journalists it is our duty to chronicle the event, and to express our profound regret at its occurrence. Various rumors are afloat in this city, both in the profession and in the community generally, as to the origin of this movement and those who played the chief part in this execution; but as we ourselves have no authentic data to guide us, we shall, for the present, forbear from any further comments.

It would be unnecessary to add a word to the above extract, but that some of the Philadelphia press have charged the Faculty of the Medical College of Virginia with having suborned Drs. Luckett and McGuire, by promises of preferment, to tamper with the class and instigate an excitement calculated to advance the interests of their school. It is hardly necessary to give to that charge the *promptest denial*. As we have remarked above, there was not the remotest idea of such a proposition until four days before the withdrawal of the students.

Again, to suppose that Drs. Luckett and McGuire could have been tempted to produce the movement by promises of places which do not exist, and with prospects of rewards which can never equal those just abandoned, would be to attach the double charge of treachery and folly to gentlemen who do not need any defence at our hands from such intemperate allegations.

In conclusion, we have been assured that not one of the students, who matriculated in the Medical College of Virginia, has returned to Philadelphia for the purpose of re-entering any of its institutions, and there is reason to believe that they are entirely satisfied with the course of lectures now going on in this city.

PROF. SMITH'S ANTERIOR SPLINT.

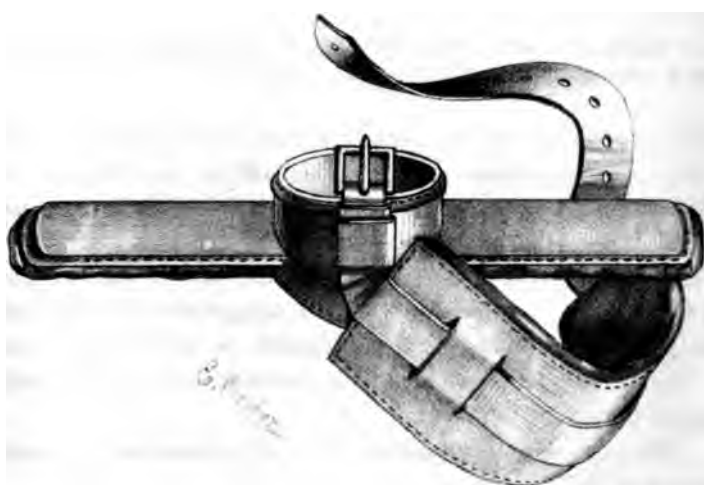
WE especially call attention to the simple but clear description of this original and useful instrument in the treatment of fractures of the lower extremity. This is the first announcement of his invention ever formally published by the eminent Professor of Surgery in the University of Maryland, and with the aid of the accompanying plates, the reader can easily understand the method of application.

DELAYED NUMBERS.

WE must ask the kind forbearance of our friends for a month or two, until we can manage to *overtake time* and be prepared to make them a visit on the first day of every month. The March number will be published punctually, we hope, and the February number by the 15th, and we must take the opportunity to return grateful thanks for the warm and prompt support we are daily receiving from the profession of Maryland and Virginia, which entails upon us still greater efforts to deserve their approbation.

DR. BEDDOES' IATROLOGIA.—1. The philanthropic doctor, having two varieties, A and C, the shy and the renegado; 2. The bullying doctor, with Radcliffe at their head; 3. The Bacchanalian doctor; 4. The solemn doctor; 5. The club-hunting doctor; 6. The burr doctor, *centaurea calcitrapa*; 7. The wheedling doctor, with the variety of the Adonis wheedling doctor; 8. The case-coining doctor; 9. The good-sort-of-man doctor, with variety, and the gossiping good-sort-of-man doctor, who "fetches and carries scandal;" 10. The sectarian doctor variety, and the inspired sectarian doctor.

Beddoes concludes this decade of Doctors with *notandum est in toto hoc genere naturam mirabiles edeæ lusus*. This is applicable to all the species, there being mules and hybrids, and occasionally monsters magnificent and dreadful like Paracelsus.—*Horæ Subseciore*.



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ART. I.—*Religion and Medicine.* A Discourse delivered to the Students of the Medical College of Virginia, in the First Presbyterian Church, Richmond, February 5th, 1860. By Rev. T. V. MOORE, D. D. (Published by request.)

“Godliness is profitable unto all things, having the promise of the life that now is and of that which is to come.” 1 TIM. iv. 8.

THE proposition of this text is a very broad one, and covers every lawful occupation in life. It affirms that religion is a hand-maid to them all, and will advance all their legitimate ends. It therefore implies a relation of religion to all such occupations, and consequently a claim that it has on them. We propose to detach one of these occupations and consider it separately, and show that godliness is profitable for that, “having the promise of the life that now is and of that which is to come.”

We propose to discuss the *claims of religion on the medical profession.*

Sir Thomas Brown, in his *Religio Medici*, mentions what he calls “the general scandal of his profession,” i. e. its alleged

tendency to irreligion. He quotes the common saying of his age, *ubi tres medici, duo athei*, and in one of the sections of his quaint and curious book gives some reasons for this general impression.

It cannot be denied that the impression is not yet wholly eradicated. This impression may rest in part on that general antagonism that has been urged by some between natural science and revealed religion. That any real antagonism does or ought to exist, cannot be affirmed, for all truth is consistent, and God in his Word, rightly interpreted, can never contradict God in his works, rightly interpreted. The error on both sides has been false interpretations. Theology has sometimes sought unduly to restrict science, and science on the other hand has sometimes trenched on theology. Each has its sphere and its methods, and neither can usurp those of the other. If it is unscientific for theology to decide a question of pure science, equally so is it for science to apply her methods to one of pure theology. Questions of moral and spiritual truth cannot be decided like those of physical truth, and the mind trained to the one is not best qualified to decide the other. This is true even in the different departments of science. A powerful mathematical mind might not be able to pursue physiological inquiries successfully, as the methods and evidences are so different. So scientific men sometimes look at religion as mere mysticism, because its methods and evidences are different from their own—a feeling, however, as unscientific as the contempt that the mathematician feels for the sciences that do not rest on purely mathematical demonstration.

The fact also that religious truths are so little involved in scientific pursuits, causes the minds of scientific men to lose sight of them, and thus by a law of the mind to lose the sense of their importance, and in the end to ignore their existence, simply because they have not looked at them. This also is unscientific.

That there is no necessary antagonism between science and religion is proven by such names as Leibnitz, Newton, Pascal, Boyle, Haller, Ray, Linnæus, Davy, and many others, living

and dead, and the fact recently stated by Prof. Henry, that the most eminent men of science in this country, Agassiz, Guyot, Pierce, &c., are believers in the Bible.

Medical men have an additional and more formidable difficulty in their case, in their frequent want of the Sabbath. The Sabbath is a religious necessity of the soul. It is needful that the powerful grasp of worldly care should be loosed, that the thralldom of secular pursuits should be broken, and that the noise of earthly strifes should be stilled, in order that the soul may go forth from this absorbing whirl, may be confronted with the mighty realities of the spiritual world, may gaze on those destinies that lie beyond the horizon of time, and listen to the voices of eternity. This can be done only by the Sabbath, descending as it does weekly, with its quiet hush of all worldly pursuits, and lifting the soul by its very stillness, by its memories and hopes, its hymns, prayers and services, to the rest that remaineth above.

But it is rarely a day of rest to the physician in full practice. It may be true, that it often might be more so than it is. The fact that some physicians in the largest practice can generally find time to attend public worship, shows that all could do so, to some extent, if they desired it. The fact is, being so often deprived of the rest of the Sabbath, and compelled to labor as they do on the other days of the week, they lose a sense of its sacredness, and cease to relish its enjoyments. Some physicians compensate in part for this by devoting all their Sabbath fees to benevolence, so that they may feel that they are engaged in a sort of religious work.

It is true that a part of this privation lies at the door of professed christians. There are some people, even church members, who are rarely sick except on the Sabbath. They are so busy during the week that they cannot afford the time to attend to their ailments. Hence they wait until Sunday to take medicine and then send for the doctor, and thus the economical christian saves his own week-day time by robbing God and the physician of the time of the Sabbath. This Sunday sickness becomes epidemic with this class of christians on col-

lection Sabbaths. But whatever be the cause of this denial of Sabbath privilege to the Medical profession, the fact cannot but have its influence on their religious character. That there is no necessary antagonism between religion and this profession, will appear by several considerations :

1. *They are kindred in their aims.*—Medicine seeks to relieve the maladies of the body, religion those of the soul; and the close connection of soul and body binds these two forms of science in a most intimate relation. They are therefore natural allies. Medicine enters the sick room, and with a gentle and skillful hand seeks to remove the bodily pain of the sufferer; religion comes beside her and whispers patience and hope to the sick one, and teaches him to bear those sufferings that even medicine cannot remove. They are, therefore, natural co-laborers, and “what God hath joined together let not man put asunder.”

2. *The instincts of the human race have always recognized this connection.*—The ancients regarded medicine as a Divine art, and worshipped the gods of healing, and connected the practice of the art with religious observances. The Egyptian physicians were their priests. Among the Greeks the knowledge of the art was confined to the priests of Æsculapius, and Hippocrates himself, the father of true medical science and the first to separate sound experience from dreamy speculation, was a priest of the family of Asclepiades, and studied medicine in the temples of Cnidos and Cos. Among savage nations, to this day, the medicine man is a priest, and healing a religious concern. Among the Hebrews, the priests were compelled to study medicine that they might act in cases of leprosy and other defiling diseases, and the art was specially practised by the sacred tribe of Levi. Their feelings may be learned from Ecclesiasticus xxxviii. 1, 2: “Honor a physician with the honor due to him for the uses which ye may have of him, for the Lord hath created him, for of the Most High cometh healing.”

3. *There seems to be a Divine recognition of this connection.*—It is a fact equally significant and beautiful, that when the great Messiah was promised, one of the types under which he was presented was that of a physician, or healer. His miracles of healing were declared by the Evangelist (Matt. viii. 17) to be the fulfillment of that prophecy that he was to bear our sicknesses (Isa. liii. 4). Hence, when on earth he went about as a healer of the body, an actual practitioner of this high art, making the lame walk, the blind see, the deaf hear, the sick, dying and even dead to return to health and life, and thus declared himself to be the great Physician, as he was the great Prophet, Priest and King. And when he sent forth his apostles after his ascension, the power of healing was one of the gifts he bestowed on them, and its exercise was often the first fact that demonstrated to men the divine origin of Christianity. Jesus called himself a physician, (the whole need not a physician, but they that are sick, Matt. ix. 12,) as well as practised the art, and one of his inspired followers was a beloved physician, and to this day, the medical missionary in heathen lands often gives the heathen the first perception of that religion that offers him the balm of Gilead for the soul. Hence there is a relation between the two that cannot be divorced or disregarded.

It is, perhaps, in part owing to this that medicine has made its most brilliant advances under the auspices of Christianity. In heathen lands it is no further advanced than it was 3000 years ago, and in Mohammedan countries, it is behind what it was in the palmy days of the great Avicenna, who rivalled Galen himself. It is only in christian lands that it has made its greatest advances, and won its brightest triumphs, and received its most reverential homage, until it has become one of the first of the sciences, as it has always been, of necessity, in every land, one of the first of the arts.

4. *Medicine both as a Science and an Art, needs the aid of Religion.*—As a science, its province of investigation overlaps that of religion. It has been said that medical studies tend

to materialism, by the habit they engender of studying man as a material organism acted upon by material agents. This may be true of small minds—it never is true of great ones, unless with mental grasp there is also moral depravity. Bacon truly says of atheism, which is only a kindred form of materialism, “a little philosophy inclineth man’s mind to atheism, but depth in philosophy bringeth men’s minds about to religion.” This is especially true of medical science. Hence a distinguished English writer says, “Whoever considers the study of Anatomy, I believe will never be an atheist, the frame of man’s body and coherence of his parts being so strange and paradoxical, that I hold it to be the greatest miracle in nature.” Indeed, so wonderful are the marks of wisdom and design in the structure of the body, that the man who can fail to see that it must have been formed by intelligence deserves the severe language of the Bible, “the fool saith in his heart there is no God.” The Christian doctrine of the resurrection of the body, and its consequent immortality, exalts that science which makes the body its study, to a position that it could never have if man were only a superior brute, and his body only a casket without a jewel.

But more than this, no materialist can comprehend in its fulness the science of medicine, for he ignores one of its most important fields of study. Every intelligent physician knows that the soul has a most potent influence over the body; that it sometimes sustains it under diseases that in other cases would be fatal; that in others, by a sudden emotion of joy or grief, one may die as certainly as by a bullet in the brain; and that by long depression of spirits the body succumbs when there is no palpable form of disease. It is precisely here, in that mysterious region where matter and mind coalesce by the inscrutable principle of life, where the various forms of insanity, and of obscure cerebral and nervous disease are found, that the most puzzling problems of medical science are located. The power of mind over body is just as plain a fact as power of body over mind. And it is in this fact that the family physician has an advantage over the occasional practi-

tioner, because he knows the mental as well as the physical peculiarities of his patients. But this brings him precisely to the ground covered by religion, and no man who is wholly ignorant of religion can even comprehend many of the influences that are at work in every soul, to whom eternity is looming up in its awfulness on a sick bed, and especially those influences that are at work in the soul of every christian. Hence if you call the narrow specialist, who takes one set of symptoms or remedies and rejects all others, a quack, does it not follow that the mere materialist, who rejects all the symptoms and remedies that are demanded by the soul, is also but a sheer empiric, a higher kind of quack? But if religion be the science of the soul, medicine which cannot overlook the soul, cannot as a science discard religion with impunity.

But medicine as an art equally needs the aid of religion. There have been physicians who excluded religion from the chambers of their patients, although I have never yet met them. But such a course is the most miserable quackery, as well as the most audacious wickedness. Even if such men do not believe that they have souls themselves, their patients do; and though they may think themselves, not a little lower than the angels, but a little higher than the monkeys, their patients have not reached that refinement, and must be dealt with as they are. Hence the silly boast of excluding religion from the sick room is vain, he cannot do it. He may exclude the minister of religion, but he cannot exclude religion itself. It will enter in spite of him, and will often neutralize all his efforts to compose the throbbing nerves of the sufferer, until his mind is set at ease on this great matter. There are cases continually occurring where a judicious conversation, a prayer, or a hymn will do more to quiet the fevered and excited sufferer than all the drugs of the apothecary. It is true that ministers may err in this matter, but so may physicians, and the man who systematically excludes the minister from his sick room or admits him only as the ghostly precursor of the undertaker, to shrive the sufferer for his shroud, is ignorant of some of the deepest

facts of human nature, and unfit to practice his noble profession. The judicious minister (and it is only of such that I speak) is an ally to the judicious physician, and as far as my knowledge goes, is so regarded by every really scientific practitioner.

5. *The medical character also demands the aid of Religion.*—That mingling of tenderness and firmness, patience and promptness, candor and self-constraint, caution and courage, that are required in the good physician, is inculcated by the religion of Christ. A gentle, kind and sympathizing manner is one of the most priceless qualifications of a physician. Many a man with such a manner and inferior skill to another without it, has distanced him immensely in the practice of his profession. We may not dislike the rough, and boisterous man in health, but in sickness we are all children, and the tender hand, the quiet step, the sympathizing eye and the gentle voice of the beloved physician come like sunshine to the soul, and are often better than drugs to the body. But nothing can permanently produce such a manner but genuine sympathy and kindness of soul, for it cannot be wholly counterfeited, and this is the very state of heart which true religion aims to produce. That gentleness, patience and kindness, that are so priceless in a physician, are the very graces which religion produces in the soul.

The responsibilities of his profession equally call for it. He is entrusted with the lives, the honor, and the most secret and confidential facts of personal and domestic life. He comes in contact with all classes, rich and poor, virtuous and vile, in the very condition where they are most open to moral and religious influence. He has the most familiar admission to the entire range of human society, at the periods when human hearts are most susceptible and impressible. A physician therefore has opportunities of usefulness that no other man possesses, and a word from him will often do far more than many words from a minister, which would be received as only professional. Hence he has opportunities to do good to the

soul, for which God will hold him accountable. To meet responsibilities like these he needs the aid of religion.

His toils also demand it. His life is one of labor and trial. He must be ready to answer every call by night and by day, in sunshine and in storm, often among the poor and degraded, where he can hardly expect even thanks for his most toilsome exertions: must deny himself many of the enjoyments of home, literature and travel that are open to others: must brave unshrinkingly pestilence and contagion, more terrible than a battery of cannon: must encounter squalor, filth and poverty in their most loathsome form, and confront death in its most appalling and repulsive approaches. To meet all these aright, surely requires the aid of religion, without advertent to the fact that he who has aided others so often in sickness and death, must at last meet them himself, and may find in his own case what he could not but have seen in others, that a death-bed is not the place to do the work of a life.

It would seem to follow from this reasoning, that the medical profession ought to be marked by that type of character which is enjoined by religion. And such we believe is true. It is a striking fact, that you but rarely find a rude, ungentlemanly or profligate physician, and if you do, it is one who has no practice, and is practically excluded from the profession. Only the most transcendent qualifications could induce society to admit such a man to the privacies of their homes and families, and hence profligacy is generally a bar to all professional success. I am aware that there are those who sneer at the profession, and delight in casting gibes upon it, but as Byron significantly remarks, this is done only in health. After a ministry that now runs through nearly twenty years, bringing me into close and frequent contact with physicians, I can freely testify, that in uprightness, integrity and benevolence, in kindness to the poor, in unrequited labor for the suffering, in honest efforts to relieve the miseries of the race, in fearlessness in meeting danger, and in true courtesy, there is no class of men on earth that deserves to rank higher than the medical profession. Unworthy members it has, like every other profession ;

tricks and tricksters, charlatans and puffing pill makers, and infidel, immoral, envious and mean men it has, because it is a human class; but its roll of recreant and miscreant members will compare favorably with that of any other class of men in the community. And I would be false to my deliberate and honest convictions did I not add, that our own city is peculiarly blessed in this respect, and that I know of no other of the same size that can present more men to whose professional honor and skill a man may freely entrust all that is dear to him.

Nor has this profession failed to furnish men eminent in religion as in science. *Harvey*, who discovered the circulation of the blood; *Sydenham*, the father of modern practice; *Boerhaave*, who completed what Sydenham began; *Pringle*, whose name the intelligent soldier will ever bless; *Haller*, for whose services three crowned heads competed; *John Mason Good*, the brilliant lecturer, and busy practitioner; *Bateman*, *Hope* and *Gordon*, who adorned their profession in England; *Godman*, *Sewall*, *Drake*, and many others living and dead in this country, all show that it is possible to combine a profession of religion and the profession of medicine so as to reach the highest place in both, and to illustrate the inspired declaration that, "Godliness is profitable unto all things, having the promise of the life that now is and of that which is to come."

Gentlemen of the Medical Classes: It may not be improper to conclude this discourse with some words of direct address to you. You are here for a little while to qualify yourselves for a high and honorable profession, and will soon scatter to meet again on earth no more forever. Your learned and accomplished instructors will give you such professional counsel as you need, and it is only proper for me to urge you, amidst the absorbing studies of your preparatory course, not to forget the one thing needful. Remember that the very profession you have chosen reminds you of the fact that life is a frail and vanishing thing, and you yourselves are doomed to the same fate from which you seek to rescue others. A few years hence, and one and another will have fallen, perhaps in braving the perils of your noble calling, and finally, one by one, you shall

lie down in the silent grave. I beseech you, then, to come to that great Physician, who has never lost a patient, nor failed to make a cure, nor refused to take a case, and by the precious balm of his priceless blood you shall be healed of a deadlier than any bodily malady, and be at last permitted to enter and dwell in that blessed land, the inhabitants of which no more say, "I am sick."

ART. II.—*An Apparatus for Treating Transverse Fracture of the Patella.* By SAMUEL T. KNIGHT, M. D., of Baltimore, Md.

THIS accident is unmanageable in proportion to the power of the muscular development of the patient. From the nature of the most frequent causes of the accident, it is more likely to occur in men of great muscular development. The action of the rectus muscle is then so powerful that the chief difficulty in the treatment is, in finding a mechanical means of overcoming its contraction and thus securing the upper fragment in situ.

CASE I.—Nine years ago, in treating a transverse fracture of the right patella, in the person of a very powerful laboring man, who had sustained the accident by falling against a step, it was found impossible, with the double strap of Sir Astley Cooper, to keep the upper fragment from being elevated more than an inch above its proper position. The constriction of the limb in this case, was, what it must be in every case where the double strap is used, both painful and injurious.

The idea of the present instrument was suggested by a drinking-gourd constantly by the side of the patient. The difficulty of keeping the upper fragment in apposition must be obviated, if union by bone is a result desired. The gourd applied over the patella was found a sufficient means of overcoming the contraction of the rectus muscle. A tin muffin ring was

then procured and found to answer the same purpose. From this stand point of observation the present instrument was constructed. [See PLATE.]

It consists of a ring of stout tin, three inches in diameter at the top and so shaped upon the lower edge as to suit the form of the knee joint. There is a bar of tin lying upon the femur and also upon the tibia, which enables the instrument to be secured more perfectly with a roller. A strap, with a cushion for the popliteal space, passing through a loop-hole of tin on either side, and a buckle attached, completes the instrument. The whole is neatly covered with soft leather. (See drawing.) The method of applying it is as follows. First bandage the limb from the toes to the hip; then take a lateral splint for the external surface of the leg, and secure this, together with the instrument, over the patella, with the same roller. The contractions of the rectus muscle will thus be effectually overcome, and bony union of the patella result, as was proven by the case just related.

CASE II.—This case was also a transverse fracture, and occurred in 1852, by a fall from a ladder. The instrument in both cases remained applied for six weeks, and both resulted in union perfect and complete. Its advantages are simplicity and readiness of construction, ease of adaptation, comfort to the patient, with a resulting *closeness* of union of the patella, which is the grand object to be effected.

High authorities declare that transverse fractures of the patella never unite by bone. The two cases reported have not yet been submitted to microscopic examinations, but to all appearances, "outside," the union is by bone. Sir Astley Cooper saw a case of both transverse and perpendicular fracture co-existing. The perpendicular fractures in the two fragments united by bone, the transverse fracture did not. Singular anomaly! Why did it not? The reason is plain. The one was easily kept in apposition—the other was too widely separated for nature to construct a bony bridge. Hence this eminent surgeon made too hasty a generalization. Mr. Pott held the same opinion, and taught moreover that "an interspace

between the fragments with a certain length of connecting substance was an advantage in the motion of the joint." In a Practice of Surgery published in Edinburgh in 1803, it is recommended, "not to be too anxious about bringing the pieces very close together, as a cure may be made, though they remain at a considerable distance ; and after the second week the joint should be carefully bent every second day, to prevent stiffness." These opinions, with the result of the cases reported, will shew that our predecessors had incorrect ideas in regard to the management of this accident. On the other hand M. Sallemani, Dr. Wm. Hunter, Mr. Charles Bell, Baron Larrey, and others, believed in and reported cases of bony union of transverse fractures of the patella.

The result of the treatment of this accident so seriously affects the future of the patient, the length of time for perfect union to take place is so considerable, that both the closeness of union and comfort of the appliances used are matters of importance. These advantages are both prominently met, and have been successfully secured, by the instrument described.

ART. III.—*The Treatment of Diabetes*. By P. H. CABELL,
M. D., Selma, Alabama.

THE treatment of diabetes, as is well known, has long been a stumbling block of reproach to our profession, especially so, as no important lesson has been discovered to account for the generally fatal termination of the disease. In this brief paper, which I feel it my duty to bring before the profession, I do not propose to discuss the pathology of the disease, or to offer any theory as to the mode of action of the remedy I have found successful; but merely to state, as succinctly as

possible, the symptoms found present in this case, the remedy used, and the result.

This patient, a negro woman, aged about 30 years, came under my care early in August, 1859. She had suffered for some time before I saw her with thirst, great debility, and progressive emaciation; and had been under treatment in another place for diabetes. When seen by me, she complained of great weakness and thirst, and stated that she passed large quantities of urine. I examined her urine, first by the urinometer, and found its specific gravity to be 40, then by Trommer's test, then by allowing it to ferment, and lastly by a microscopical examination. All these tests showed sugar beyond a doubt. Another symptom in her case (which is I believe rare) was, that the secretion from the skin was saccharine. She stated that she had frequently tested this matter, and always perceived a sweet taste; I took her word for it, and did not have the zeal to verify it. The remedy I induced her to try, was revolting enough, I admit; but better than the almost certain death that awaited her, should the disease not be checked. This remedy was her own saccharine urine. I do not know that I had any theory, but I had heard it rumored that it had been tried with success, and knowing that sugar had been lately used, with sometimes promising results, I thought that glucose might act better than cane sugar, and that the glucose prepared in the body might, from some peculiar combination or mixture with the urinary salts, be a compound that would so modify the tissues, organs and secretions, as to allow them to return to their healthy standard. But the *modus operandi*, while always satisfactory and useful, is not the greatest aim of the physician; the relief from suffering, the rescue from death should be the highest aim.

This woman took no remedy of any kind while under my care but her own urine; neither was she much restricted in her diet, but allowed bread and a good many vegetables. She was directed to drink all the urine she passed, adding ice if she preferred it.

On August the 20th, the day I commenced her treatment, the specific gravity was 40

August 27th, 30

September 8th, 32

September 26th, 23

October 8th, 25

October 31st, 28

November, 6th, 26

I have since then seen this woman frequently, and she tells me she is perfectly well, that her strength has returned, and her excessive thirst left her. She stated that when she first commenced drinking her urine, it was not very disagreeable, being slightly acid and sweet, "like lemonade," but as she got better, she found it a bitter dose. When last seen I examined her urine; and by Trommer's test, could find no sugar at all; the urine appeared natural, was not voided in larger quantities than in health, and after standing, contained a considerable quantity of the phosphates. This is the only case of diabetes recently under my care, and as all the others I have ever treated have died, and this one appears to have recovered, I shall certainly make use of the same remedy again, should I find another patient willing to use it. And I make this communication *now* from a sense of duty alone; for it would be much more satisfactory to myself to be able to present more than this one case successfully treated; but as the disease prevails everywhere, and surely carries its victim to the grave, I have thought that this solitary case of mine might be the means of saving or prolonging some life, which would be lost by delay. In any event, its value can soon be tested, if those physicians having such cases feel willing to try a revolting, but certainly a harmless remedy.

ART. IV.—*Medical Statistics of the Virginia Penitentiary.*

By W. A. PATTERSON, M. D., Surgeon.

Table of Hospital Admissions for the past six years.

YEARS.	Number of persons in prison.	Number of patients treated in the Hospital.	Number of Deaths.	Average number of days lost by each person in the prison from sickness.	Number of cases of scurvy treated.	Number of times fresh and succulent vegetables were allowed.
1853-4.....	283	651	20	14 $\frac{2.5}{100}$	36	52
1854-5.....	305	456	16	17 $\frac{3.3}{100}$	16	71
1855-6.....	319	183	8	10 $\frac{6}{100}$	8	159
1856-7.....	313	190	18	11 $\frac{7.5}{100}$	12	207
1857-8.....	309	253	10	10 $\frac{3.3}{100}$	2	123
1858-9.....	280	168*	2	6 $\frac{2}{100}$	1	209

Richmond, January 16th, 1860.

ED. MD. AND VA. MED. JOURNAL:

Dear Sir,—We have had many conversations concerning the proper diet for sick people, and also the proper kinds and quantities of food necessary for the inmates of insane asylums, prisons and other eleemosynary institutions. The foregoing tabular statement, prepared, at your request, from the records of the Hospital Department of the Penitentiary of Virginia, furnishes the material from which you can see the relative health of the inmates thereof, under different circumstances, for the six years immediately preceding the 30th day of September last.

* Seven of this number were invalids returned to the Penitentiary by the James River and Kanawha Company.

The laws of the State require the prisoners to be fed on coarse and spare diet, intending to deny them the pleasures of the table, both as it regards the quality and quantity of food, as punishment for crime, in addition to the deprivation of liberty. These are salutary provisions of law, as the execution thereof subdues and breaks the spirit of bad men, and does not permit the good and abundant fare of a prison to be rather an encouragement of crime with the lazy and vagabondish.

The law, nevertheless, does not contemplate so rigid an execution thereof as materially to affect the health of the convicts, but humanely leaves the permission to change and modify the diet at the discretion of the superintendent, or the surgeon, when it seems necessary.

Early in the year 1856, in frequent and free conversations with the late superintendant, Col. Charles S. Morgan, his attention was directed to the kind and character of diseases mainly referable to defective nutrition, and whilst he was a scrupulous, correct and exact law officer, he was kind, open to philosophic enquiry and heedful of its dictates and conclusions. An improvement in the dietetic department of the prison resulted, and has been followed by great improvement in the general health of the prisoners, as is strikingly evidenced by the diminished list of hospital patients and the decrease of the time lost from labor by sickness. Anemia, scurvy, scrofula and dropsy, the immediate consequences of poor nutrition and thin blood, particularly in the dissipated and aged, have almost left the prison.

The diet of the prisoners, though coarse, has been so far increased as to give them a fair allowance of meat and plenty of bread and vegetables of some one kind for dinner. A pint of good coffee, a fish or small piece of meat or molasses, and always plenty of bread for breakfast. A greatly increased supply of vegetables is given them and whatever is appropriate to the season is furnished. This just admixture of animal and vegetable nutriment, which makes healthy blood and supplies

the waste of the tissues, preserves the men in health, and the improved looks, activity and strength of the prisoners attest its propriety.

Respectfully, yours,

W. A. PATTESON,
Surgeon of the Penitentiary of Virginia.

TRANSLATIONS AND SELECTIONS.

I.—*On Sudden Death in Infancy and Childhood.* Lecture delivered at the Hospital for Sick Children, Nov. 12, 1859. By CHARLES WEST, M. D.

I WILL not occupy your time, gentlemen, in the attempt to prove that the diseases of childhood require a kind of study such as is not commonly bestowed on them by students during their pupilage; such, indeed, I might say, as they rarely have the opportunity of bestowing. Our large hospitals are still inadequate to meet the necessities of the adult population, and it is not the fault either of their managers, or of their medical officers, that children form in them but a very small minority of the patients who there present themselves to your observation. Nor, indeed, could this well be wished otherwise,—for the characters of disease are more easily read in the adult than in the child; and not till you can interpret the first with facility are you likely to decipher the hieroglyphics in which the latter are inscribed.

It is not, therefore, at the outset of your Medical studies, that a visit to the Children's Hospital is likely to yield you its full benefit; but, after you are acquainted with the general physiognomy of disease, it will profit you much to learn how its symptoms are modified, and its course is altered in early life; and how the dangers, against which it behooves you most to be on your guard, are not altogether the same in infancy and childhood as in adult age.

An exemplification of some of these peculiarities in early life will be furnished us if we inquire into the circumstances which commonly attend Sudden Death in Infancy and Childhood.

A thorough investigation into this subject in all its bearings would imply most minute research into some of the most difficult problems in physiology and pathology; a task for which I must own myself unequal, and one for which a single hour affords no sufficient time. But still, regarded even its most obvious bearings, it must always be well worth the while of the Practitioner of Medicine to know when to be on the look out for sudden danger, or when, on the other hand, he may rest quiet in the certainty that, be the perils of a disease what they may, they will increase by but slow degrees, and ample warnings will precede their fatal issue.

The occurrence of sudden death in infancy derives part of its importance from the frequency with which it happens. It appears that out of 627 instances in which death took place suddenly within the London registration district in 1854, 236 were cases of infants under a year old. From that time, however, until, with advancing years, the processes of decay begin, sudden death is an accident of extreme rarity—so rare indeed that between the age of one and five years only thirty-six instances of its occurrence were met with; or not more than an eighth of the number stated to have happened in the first year of life. These statistics, however, do not by any means represent the subject in the full extent of its practical importance; for we are concerned, not with those cases only in which a state of apparent health is cut short by unexpected death; but also with those still more numerous instances in which disease, seemingly not grave, or at any rate apparently attended by no pressing danger, ends all at once in death.

When sudden death occurs in the aged, or in those in middle life, the anatomist is generally able to point to some definite cause of its occurrence: the cerebral vessels, rendered fragile by calcareous deposits in their coats, have suddenly given way, and allowed of the effusion of blood upon the brain; or an unsuspected aneurism has burst, or the heart's walls themselves, weakened by fatty degeneration, have torn; or some ulcer of the stomach or intestines has perforated the thin membrane, and the escape of the intestinal contents into the abdominal cavity has produced intense peritonitis, and speedy, if not immediate death. The machinery, in short, is found to have been at fault; its movements have ceased, as do those of the watch whose main-spring is broken. In childhood, however, we scrutinize the frame, a few moments since so full of life,

now still for ever, and yet fail to discover why it has ceased to move: the cause which stopped it had done no irremediable damage, had left, perhaps, scarcely a trace of its effects; it was but momentary in its action, and could we set the machinery once more in movement, there seems no cause why it should not again perform its functions as harmoniously as before. Or, if we do find some flaw in its completeness, yet, even that is seldom such as time might not have remedied, still more seldom such as by its nature to give account of the suddenness with which all the processes of life were arrested.

A little boy, eight months old, had cut two teeth at six and a-half months, had always seemed well, save that now and then his hands were a little clenched, and his thumbs drawn into the palm. His bowels were slightly constipated; a small dose of castor-oil was given him. He swallowed it readily, but had scarcely done so when he stretched out his tongue, his face turned livid, but was scarcely at all distorted; he did not struggle, he uttered no cry—scarcely a sound passed from him, and he was dead!—dead with no trace of disease; from mere momentary spasm, which, for a few seconds, stopped his breath; which, had it ceased sooner, would have left no cloud upon his face, nor quelled for a quarter of an hour his cheerfulness.

I have related this case, not merely because it serves as a specimen of the way in which in early infancy life is not infrequently cut short without any trace of local mischief being discoverable; but because it illustrates the fact that it is by sudden interference with the respiratory process that such death is oftenest produced. The suddenly fatal apoplectic seizures which we observe in the adult, scarcely ever occur in early life, nor do we often meet, except in instances of congenital malformation, with sudden death dependent on disease of the heart. But in the course of all affections which seriously interfere with the process of respiration sudden death is a contingency for which we should always be prepared, and this especially in proportion as the disturbance of breathing partakes of a spasmodic character.

Now, of all the forms of spasmodic disorder of respiration, that to which the name of spasmodic croup, or laryngismus stridulus, has been given, is by far the most frequent; and to it, probably, three out of the four sudden deaths of children under one year old, are due. It is not that this ailment is generally fatal; for in proportion to the frequency of its occurrence, the mortality which arises from it is small; but it is that the fatal event is apt to be very sudden, which accounts for the anxiety wherewith its symptoms are watched by those who understand their import.

In early life, as you are aware, the excitability of the nervous system is far greater than in later years; and slight causes make a deeper impression, and produce a more profound disturbance, while the controlling power of the brain is smaller than it becomes in after-life. In infancy, too, the sources of irritation are especially numerous:—the branches of the trifacial nerve during the whole period of teething; the pneumo-gastric nerve, whenever, with a change of diet, food is taken that is not well assimilated; the spinal nerves, when intestinal disorder, or diarrhœa is produced, are so many centres, whose disturbance when once excited betrays itself in the thumbs drawn into the palm, in the somewhat hurried breathing, in the partially-closed larynx, and the peculiar crowing sound which that occasions with each inspiration, and which disturbance need increase but a little—but for a moment—to produce complete closure of the larynx, and sudden death. For days—for weeks, perhaps—these trivial symptoms may continue; and if I now insist on their importance, it is because they are often accompanied by but little disorder of the general health,—because they are seldom dependent on disease of the brain, or remediable by remedies directed towards it,—because they often are so slight that the anxiety of parents is hardly excited by them, and the watchfulness even of the doctor is apt to fall asleep. I do it also because the avoidance of the dangers they betoken, depends on the observance of a number of minute particulars which may seem scarcely worth notice: because sudden noises, which startle,—a rapid change of temperature, which chills the surface, though only for a moment,—a rude awakening from sleep,—or even an over-hasty or an over-full meal, which interferes with the descent of the diaphragm,—any cause, in short, that deranges the regular rhythm of the respiratory movements, may give rise to spasm, and the spasm may prove suddenly fatal.

In the out-patients' room of this hospital you will see many such cases; and it is no bad exercise to learn to notice and to interpret signs that would readily escape the eye of the unobservant, although they are the indications of a state of system in which, while the prospect of well-doing vastly preponderates, yet the chances of sudden death are never to be lost sight of.

In cases of this description, too, when once convulsions have occurred, a new element soon comes into play, which aggravates the danger and increases the frequency of the attack. The blood imperfectly depurated, if the disturbance of respiration has been considerable, seems in itself to exercise an injurious influence, by increasing the irritability of the

nervous system, and thus promoting the return of the attack. If once convulsions have occurred, the probability of their recurrence is much increased; and the oftener they have happened, the more often are they likely to return, and the graver is the prognosis which you are compelled to form. This rule holds good, too, not merely with reference to spasmodic croup, but with reference to all spasmodic affections of the respiratory organs, and hooping-cough affords one of its best exemplifications. In some fit of coughing more violent than any of the others, the spasm of the larynx is of longer continuance, the face livid, a fruitless expiratory effort is made, and before the spasm relaxes a convulsion takes place. This convulsion is but very seldom a solitary one. You notice that for hours it is succeeded by very accelerated breathing; by which, however, the blood is very imperfectly depurated, as you see by the lips, which never resume their natural color. At length the disturbance once more reaches its climax, and another, and then another convulsion occurs, with a gradually diminishing interval, until death takes place. If, in such circumstances, you watch a child, you will notice how carefully it avoids every movement—how it remains in the same posture, occupied apparently altogether with the business of carrying on its respiration as gently and quietly as possible. Change its posture rapidly, excite it by sudden entrance into the room, disturb it by a violent emetic,—interfere, in short, in any way with the regular steady performance of its respiratory movements,—and convulsions will come on, and in these convulsions death is likely to take place.

Some years ago I learnt this lesson in the case of a little boy, six years old, in whom hooping-cough set in with great oppression of the respiration, though that was out of proportion to the signs of local mischief detected on auscultation. I treated him with greater activity than I should now do, and gave him tartar-emetic, which failed, however, to reduce the frequency of his respiration, or to improve his condition. Still his state was one suggestive rather of anxiety for the future than of present danger. He was breathing carefully, anxiously, as though respiration were a function which required all his attention for its performance. Wishing to auscultate him, I had him lifted out of bed on to his mother's knee; but scarcely had he assumed the upright posture when a fit came on, in which he struggled much, his face became livid, almost purple; and though in less than three minutes the convulsion was over, it left him ashy pale, with a very feeble pulse, and perspiration streaming from every pore. He lived for thirty-six hours longer, but his respiration never resumed his natural frequency;

a second fit occurred, six hours after the first: and then a third, which rendered his pulse still feebler. He lay now on his back, uttering a piteous moan, his face livid and miserable, his eyes dim, and, though his pupils acted naturally, he yet complained that he "wanted more light." A fourth fit lasted several hours, and left him insensible: with the death-sweats on his face, and his eyes distorted, then came a fifth, which lasted for but a few minutes, when he died tranquilly.

There were here no morbid appearances in the brain, the lungs were extensively congested, and their lower lobes were in the first stage of pneumonia. The blood was imperfectly aerated; but, even so, while no demand was made for more adequate performance of the respiratory function, dangerous symptoms did not appear. The child's posture was suddenly altered, his circulation quickened, attempts at more frequent respiration in order to keep pace with the increased necessities of the system did but issue in an attack of spasm, and another, and still another, returned causelessly, till at length what we can scarcely call other than a *needless* death occurred.

There would be no difficulty, if time allowed, in multiplying illustrations; but it is scarcely necessary to do so, and we may sum up the chief conclusions, to which thus far we have been conducted, as follows:

1. That sudden death in infancy and early childhood is most frequently dependent on spasmodic disturbance of the respiratory process.

2. That the occurrence of a single convulsion from such spasm renders it in the highest degree probable that others will follow it; and, consequently, implies a far greater risk of sudden death than exists so long as no such convulsion has taken place.

3. That when any spasmodic disorder of respiration is present, it is impossible to be too careful in avoiding any sudden impression on the nervous system, any sudden change of temperature, any hasty alteration of posture; in short, any cause whatever by which the respiratory process may be disturbed.

The next fact, to which I desire to call your attention, is the occasional occurrence of sudden death wholly independent of spasm, but in consequence of the sudden attack of extensive invasion of the respiratory organs by disease.

One of the simplest illustrations of this occurrence is met with in those instances in which the lung has been but imperfectly expanded at birth; the child in such circumstances lingering with lessening powers and increasing weakness, till life comes to an end after the lapse of a few hours, or days, or weeks. Such death is very often sudden, and not infrequently

preceded by convulsion ; and this, although nothing in the infant's condition a few hours previously, had indicated that it was less well, or that anything had diminished its chances of surviving its early difficulties.

Something of the same kind you may occasionally observe when—in the course of an attack of bronchitis or pneumonia—a large extent of lung has suddenly become collapsed, and the amount of breathing surface has thus been lessened considerably, and all at once. Such an accident is likely to happen in proportion to the tender age of the child, and its possibility is always to be borne in mind as governing your prognosis, and as suggesting an explanation of the otherwise inexplicable death of a patient. The frequent visits to a young infant suffering from pneumonia, the often-repeated auscultation, the minute watching of little indications of its condition, have reference to such contingencies ;—the attention to its posture, the keeping its chest somewhat elevated, the not allowing it to lie long on one side, but shifting it frequently from the one to the other,—are precautions prompted by a knowledge of the fact that collapse of the lung may take place suddenly, and that its sudden collapse may be followed by sudden death.

Now and then, though far more rarely, mere bronchitis or mere pneumonia is the occasion of sudden death in early life ; and this sometimes even when neither the extent of tissue involved, nor the stage which the inflammation has reached, is adequate to account for the fatal issue of the case.

Just twenty years ago I saw a little boy aged one year and eight months, who was reported to have had a slight feverish attack for a few days before he came under my care. This still persisted, and on auscultating him a slight mucuous *rale* was heard at the base of both lungs. At the end of four days he seemed a little better ; at five P. M. he took some food with appetite, but at nine P. M. he suddenly became faint, seemed dying, and actually died at two o'clock in the morning. No explanation of this sudden death was furnished by the post-mortem examination, which discovered only that the lower lobes of both lungs were in the first stage of pneumonia.

In M. Louis' Memoir on Sudden Death, that distinguished physician, though treating of it in the adult, subjoins in a note the history of a little girl four years old, who was suddenly seized by convulsions when apparently in perfect health on January 4. The convulsions were brought on apparently by a violent quarrel. She soon recovered from them, but was attacked thirty-six hours afterwards by shivering, followed by heat, cough, and pain in the left side where the auscultatory evidences of pneumonia were perceptible. She improved

under treatment, and on January 11 was decidedly better. In the evening she was cheerful, sat up in bed and played with her toys as if she were well. At ten o'clock she went to sleep, woke and coughed at midnight and at three in the morning. On the latter occasion the cough soon ceased, and the child began talking to her mother, and complained that she had not stayed with her all the night. While uttering the word she died.

In this case it was thought that the right half of the cerebellum was somewhat less firm than the left; but the only condition which could be termed actually morbid, was presented by the lower lobe of the left lung, which was in a hepatised state for rather less than half of its extent.

I have related these cases in order to impress on your minds that the degree or extent of pulmonary inflammation is not an absolute measure of its danger in early life; but that sometimes death occurs suddenly as an indirect result of the interference with the respiratory process. I can only tell you the fact; I regret that I do not know of any criterion by which to distinguish the cases in which this sudden termination is most likely to happen.

Another class of cases in which disorder of respiration may be followed by sudden death, comprises those instances where serous effusion takes place suddenly into the cavity of the pleuræ.

A little boy, not quite three years old, whose health had never been very robust, was brought as an out-patient to the Children's Dispensary in Lambeth on June 11, 1847, on account of a chronic impetiginous eruption on his scalp. On the night of June 12, he suddenly became hot, and his chest was much oppressed, but on the following day he was well enough to be out at play in the garden, and on the 15th was drawn a mile and a half in a perambulator to and fro from the Dispensary, when I saw him for the first time. He looked pale and ill, was feverish, and breathed with a wheezing noise; but there was nothing about him indicative of serious mischief; and in the hurry of prescribing for a large number of patients, I regarded him as probably a phthisical child, who had caught cold recently; I ordered some simple medicine for him, and at one P. M. he returned home. At three o'clock the same afternoon he suddenly became much worse, was very faint, breathed with extreme difficulty, and died at eight o'clock the next morning. Some serous fluid was present in the abdomen, and about 3vj. in either pleura, by which the lower lobes of both lungs were so compressed as to be almost destitute of air; but there were no signs of inflammatory action, and no other morbid appearance.

In some of the cases death is far more sudden. A little boy, aged 8 years, was attacked by moderately severe scarlatina. Slight anasarca appeared on the 19th day, which had somewhat increased, but was accompanied by no urgent symptom, on the 22d day, when he walked a distance of two miles without suffering serious fatigue. After a rather restless night, he rose to relieve his bowels, and there was so little suggestive of danger in his condition, that his mother left him for a few minutes alone. On her return, he seemed faint, the bowels having acted but scantily. He was replaced in bed, when he immediately began to struggle faintly, and in five minutes was dead.

The lungs were compressed by abundant serous effusion into each pleura, and the pericardium also contained four ounces of fluid; but there were no other morbid appearances, with the exception of some congestion of the kidneys.

In any case, then, of dropsical effusion in early life, it behoves you to bear in mind the possibility of its very rapid increase; of the outpouring of serum into the cavity of the chest so suddenly and with so little warning as to endanger or even to destroy life. Just, too, as I have warned you in other circumstances, that hurried movements, bringing with them sudden changes in the circulation, and sudden demands on the respiratory function, cannot be too carefully avoided; so, in these cases, is the same precaution pre-eminently necessary. If the child had not travelled in its perambulator in the one case, had not been allowed to get out of bed unaided in the other, death would probably not have occurred when it did—would possibly not have occurred at all.

It seems, then, contrary, to what were most probably your preconceived impressions, that sudden death in early life is most commonly due to some disturbance, direct or indirect, of the respiratory function; that either sudden spasm arrests it, or, disease having interfered with its perfect accomplishment, some sudden demand for its complete exercise issues in the sudden stand-still of the whole machinery. Neither, indeed, does disease of the brain itself stand next in importance among the causes of sudden death; but after these cases in which death may be said, in technical language, to take place from apnoea, come those in which it depends on asthenia; in which life goes out for want of nervous power to keep the vital functions in activity.

It is in this manner that sudden death is apt to occur in diarrhoea; it is thus, too, that it sometimes takes place in early infancy when over-active treatment has been adopted for the cure of pneumonia or bronchitis; or when, independent even

of over-treatment, the attention has been so engrossed by the *disease* that due care has not been taken to provide for the nourishment of the patient. This class of sudden deaths, though by no means rare, may be said to be almost needless, inasmuch as its occurrence may, by due foresight, be almost always guarded against. The accident is perhaps more likely to happen and more difficult to prevent in the course of diarrhœa than of most other disorders, since the infant is exhausted not merely by the abundant discharges, but also in many instances by the severe pain which accompanies them. The danger, too, is great in proportion to the tender age of the infant; and it is relapses of diarrhœa that the hazard is most considerable, and the warnings which foreshow it are the slightest. A return of the disorder of the bowels, which for some hours, or for one or two days, had seemed diminishing, has rekindled the apprehension of relatives: when, once again there comes a diminution of the previous apparent distress, a lessening of the restlessness, a quieting of the previous plaintive moan; and though the diarrhœa is not much diminished, yet at any rate the disorder of the bowels is not growing worse, and probably has at no time been so considerable as at its first onset. The apparent good is hailed with joy; the fact that this change may after all import evil, not good, is lost sight of; the little things which show their real meaning are not noticed, probably not observed, for they are nothing more than a slight dilatation of the pupils—so slight that in the darkened chamber it is not noticed; an apathy to external objects and sounds, which seems perhaps to be only the good result of the hushed stillness maintained around the darling's cot; a loss of the power of generating heat, which the tender officiousness of the mother renders almost imperceptible. Such, however, are often the only precursors—the harbingers, if you understood their mission, of the sudden collapse which, in an hour or two, is followed by a death as quiet often as a falling asleep.

Even these premonitions are not always seen, but when young infants are already much exhausted, the disturbance of the nervous system, slight though we may fancy it, which accompanies the action of the bowels may suffice to upset the whole balance of the functions. A slight convulsion, a sudden dilatation of the pupils, a momentary sigh, and all is still in death.

Should I do nothing more, I shall be well content to-day, if I can impress upon you how little things are to be noticed, little precautions to be observed, little dangers to be avoided in the diseases of infancy and childhood.

Though it is in the course of diarrhœa that the danger of

sudden death from exhaustion is most to be watched against, yet your own experience will suggest to you many other circumstances in which you are likely to encounter it. You will meet with it in cases of pulmonary inflammation; the disorder of the respiratory function of itself disturbing the nervous system, and predisposing to the same occurrence which your active treatment (necessary perhaps at first, though now too long continued) tends in another way to produce.

I remember being called to see an infant three months old, who had had a slight attack of bronchitis complicating measles, for which it had been treated very judiciously by its medical attendant. The mischief in the chest was clearing up, the child was much better; anxiety was almost over; when suddenly the inspirations became again hurried, the pulse extremely rapid, the child took no notice, it seemed dying. The explanation of these symptoms, however, was not far to seek; the infant was at the breast, but its mother herself was ill, her secretion of milk scanty; her babe had but little power to suck, and got but little even of the small amount of nourishment which there was for her; in a few hours more her death all but suddenly would have taken place. A few drops of brandy revived her, a meal of ass's milk renewed her strength, and in a few hours the transition from imminent peril to perfect safety was complete.

One word more of caution applicable to the management of convalescence from all exhausting diseases in early life. Too great care cannot be taken that no needless exertion is made, no sudden change of posture permitted, no protracted withdrawal of nourishment allowed even during the hours of sleep. Some years since, I watched a little boy through severe remittent fever; the grave symptoms were at an end, and though the child was extremely weak, convalescence was fairly established. He had restless nights, however, on which account a small dose of Dover's powder was given him towards evening. He slept the better for it, though still waking up, and taking food during the night. On the third night the same dose was again given him, he slept so well that his nurse did not like to disturb him; she lay down beside him and slept too; when morning came he was dead, he had passed away quietly in his sleep. I have never since forgotten the danger, nor omitted to caution the attendants of a child, that they must still be watchful, even when recovery seems most certain.

And now I have enumerated a great variety of circumstances in which sudden death may take place, but yet have not spoken of disease of the nervous centres themselves as tending to its production. I did so advisedly; for in spite of the extreme

susceptibility of those organs to disturbance from causes almost numberless, yet it scarcely ever happens that structural changes are discovered in them sufficient to account for sudden death; though, as I scarcely need remind you, actual organic disease of the brain is even more frequent in the child than in the adult. Of twenty-one instances of sudden death which occurred in infants under three years old in the city of Ratisbon, MM. Herrich and Popp, whose official duty it was to make an examination of all such cases, did not meet with one in which any important morbid appearance was discovered in the brain. For this fact I imagine the two most important reasons are,

1st. That in early life the cerebral vessels have not undergone those changes by which, in later years, their coats are rendered brittle, and they are disposed to give way.

2d. That the unossified skull, while it allows during infancy and early childhood, of a greater fluctuation in the quantity of blood circulating through the brain than is possible when ossification is complete, yet, at the same time, renders such changes far less serious; the yielding *fontanelles* and unclosed sutures allowing of the ready adaptation of the organ to its varying contents. Even the actual effusion of blood into the cavity of the arachnoid seldom causes immediate death, but oftener is the first step in the production of a hydrocephalus which lasts for months or years, a standing illustration of the power of the skull to accommodate itself in early life to great changes in its contents, and of the brain to discharge its functions under conditions which, at first sight, would seem of necessity to preclude their performance.

That most intense congestion too consequent on sun-stroke, of which we see instances now and then even in our temperate clime, generally subsides in the course of a few hours; and oftener than might have been expected it passes away without leaving behind any evidence of abiding mischief having been inflicted on the organ whose circulation had been so rudely disturbed.

Now, from this sketch, very short and very imperfect as I full well know it to be, some lessons of practical value may still be gathered. Of them the chief are,

1st. That in the great majority of instances, when death suddenly befalls the infant or young child, it is an *accident*; it is not a necessary inevitable result of any disease from which it is suffering.

2d. That the danger of this accident happening may often be foreseen, and that such foresight is not hard to attain by any who will cultivate the habit of minute observation. I read a few days since of how the elephant-hunters in Ceylon,

when tracking that sagacious beast through its native forests, since on account of his acute sense of smell "it is indispensable to go against the wind in approaching him; when the wind is so still that its direction cannot otherwise be discerned, will suspend the film of a gossamer to determine it, and shape their course accordingly." And so you too will find that things which seem as slight almost as the gossamer film may serve to indicate, to those who watch them well, changes as momentous as those on which depends death or recovery.

3d and lastly. As small things portend the danger, so small things go far towards warding it off,—food, warmth, posture, quiet; little matters, such as you may think the nurse's office more than yours, are those which over and over again turn the scale upwards or downwards, and many an infant's life has been saved or lost by observing or neglecting points which one is but too apt to lose sight of as utterly beneath the dignity of science.

II. *Differential Diagnosis of Ovarian Dropsy.* By Prof. J. Y. SIMPSON, of Edinburgh.

THERE are a great many pathological products, and many physiological conditions of the pelvic and abdominal organs as well, with which ovarian tumors are very liable to be confounded, and for which they are very frequently mistaken. In what I am about to say, however, I shall not enter into a discussion of all the signs and symptoms of these several morbid and functional changes, but must content myself with pointing out in what they differ from ovarian tumors, and by what means the distinction may most readily be made between them.

1. *Retroverted Unimpregnated Uterus.*—When an ovarian tumor is still of small dimensions, and is still contained within the pelvic cavity, one form of disease with which it may readily be confounded is retroversion of the uterus. I have not yet had occasion to direct your attention to the displacements of the womb; but I may so far anticipate my remarks on that subject, as to say that a very frequent kind of displacement is that in which the whole organ is turned backwards, or retroverted, or in which it is bent backwards, upon itself, or retroflexed, so that the fundus comes to lie in the Douglas' space, where it can be felt by the finger on making a vaginal exami-

nation. Unless when bound down by inflammatory adhesions, it is readily movable in this position; and as the mechanical and functional disturbances which it produces are the same in character and kind as those caused by a small ovarian tumor which has descended into the same situation, it is not always easy by the mere touch of the finger to make a definite distinction between them. The great mark of distinction between the two diseases is that when the body, felt through the posterior portion of the roof, or cul-de-sac, of the vagina, is moved with the finger, a consentaneous movement is produced in the whole uterine organ in the case of retroversion, while the tumor and the uterus are each capable of a distinct degree or amount of independent movement when that tumor is of ovarian origin. If the finger be kept in contact with the cervix uteri, when movement of the doubtful body is attempted to be made, the consentaneous or independent movement of the uterus may usually be easily recognised. But to make sure of your diagnosis you may require to introduce a sound into the cavity of the uterus; and if the case be one of retroversion of that organ, you will find that the sound, instead of passing upwards and forwards, as it always does when the uterus is in its normal position, passes nearly directly backwards, and by simply turning round the instrument after it has been passed in this unusual direction, you can make the supposed tumor disappear, if you should find this step necessary to complete the diagnosis; for by this means the displacement is rectified, and the womb restored to its proper position. On the other hand, if you have to deal with an ovarian tumor, you will find that the sound passes readily upwards and forwards behind the pubis, and when it has been thus introduced into the interior of the uterine cavity, you can use it to fix the womb with perfect certainty, while the tumor remains freely movable in every direction. Should the retroversion be complicated, as it sometimes is, by the presence of a small fibroid tumor of the uterus, growing from the posterior wall, its fixity when the uterus is fixed and its consentaneous motion when the uterus is moved, will prove its connexion with the organ, and prevent your falling into the error of mistaking it for a small cystic tumor of the ovary, an error which has been often committed.

2. *The Gravid Uterus*.—Perhaps there is no mistake more frequently made in connection with the diagnosis of ovarian tumors than that of confounding them with the enlargement of the uterus consequent on impregnation. Patients have often been suspected and pronounced to be pregnant when they were the subjects of ovarian dropsy; and, on the other hand, the more dangerous error has often been fallen into of supposing

the patient to be the subject of so grave a malady when she was merely in an advanced stage of utero-gestation. Many years ago, perhaps thirty or forty, a case of this kind occurred, where a female, with an abdominal tumor, was supposed to be the subject of an ovarian tumor, and where it was decided that the best hope of a successful termination was to be obtained from the operation of ovariectomy. Several gentlemen, who ought perhaps to have known better, saw the case and concurred in their diagnosis, and in their opinion as to the propriety of performing the operation. The day was fixed, and every thing prepared for the operation, when the patient saved herself all the horrors and dangers of it by giving birth to a baby a few hours beforehand, dispelling most satisfactorily and efficiently the supposed morbid growth. Such an error was more excusable in those days when obstetric auscultation was still unknown, than it would be now that we can have such a certain sign of the existence of a fœtus as the sounds discovered by the stethoscope. The sounds of the fœtal heart enable us now to recognise a case of pregnancy in the later months, and prevent us from mistaking it for one of ovarian tumor, in which no sound at all is heard on listening with the stethoscope. But even in the use of the stethoscope there is a possible source of error against which you must be warned. The sounds of the fœtal heart are usually recognised by the rapidity of the beats, 120 or more in the minute. But when you apply a stethoscope over an abdominal tumor, and hear through it heart-sounds beating at the rate of 120 or 130 times in the minute, you must not immediately decide these sounds to be indubitably of fœtal origin, and thence conclude on the existence of pregnancy. The frequency of the pulsations is not always enough. The late Dr. Mercier, of Manchester, once brought a patient for me to see, who had an abdominal tumor, the nature of which it was rather difficult to determine. From palpitation and vaginal examination I had a conviction that the tumor was of ovarian origin, but on listening with the stethoscope we could hear beatings in it between 120 and 130 in the minute. The sounds were very like the pulsations of the fœtal heart; but on applying the finger to the patient's pulse at the wrist found her heart to be beating at this same rate of frequency. The sounds were not those of a fœtal heart, but of the patient's heart, transmitted through an ovarian tumor. Whenever, therefore, you hear a pulsating sound in the abdominal tumor, however rapid or however slow, you must always carefully determine whether it corresponds or not to the impulse derived from the patient's heart, before you can decide as to its fœtal or maternal origin. Other points of difference between ovarian tumors and the gravid

uterus have been insisted on, but the great distinction, as I have been saying, is the absence in the former of those foetal heart-sounds which are usually so distinct in the latter; and all other marks of distinction are of such secondary importance that I need hardly enumerate them. The rapidity with which the pregnant uterus enlarges is usually so much greater than is seen in the case of ovarian growths that it may sometimes serve to aid the diagnosis. But in using it you must bear in mind that the ovarian tumor, in some cases, grows as rapidly in size as ever the pregnant uterus does. Then, in pregnancy, you have further the placental bruit; and on making a vaginal examination you can produce the movements in the womb which is described as *ballotement*, both which signs are absent in ovarian growths.

3. *Fibroid Tumors of the Uterus.*—Another form of disease which it is sometimes difficult to distinguish from ovarian tumors, is one of which you have a specimen in the ward in the case of a woman who is the subject of an abdominal tumor of the size of a large adult head, rounded in form, and lying somewhat towards the right side. This tumor has very much the form and the appearance of an ovarian growth, but by studying the distinctive marks which I am about to explain to you, we have come to the conclusion that it is not cystic and ovarian in its origin, but that it is solid and grows from the uterus,—that it is, in fact, a large fibroid tumor of the uterus. From mistaking such a growth for a cystic ovarian tumor fatal practical errors have sometimes been fallen into; for it has repeatedly happened that surgeons, and men of high standing in the profession, believing they had to do with a case of ovarian tumor, have opened the abdomen and removed a morbid mass. After performing this operation, as they imagined, of ovariectomy, when they came to examine the tumor they have found that they had not performed that operation at all, but had extirpated a large pediculated fibroid tumor of the uterus. That operation I need hardly add, has almost invariably ended fatally. In other cases the abdomen has been laid open, and the operation suspended because the disease was found not to be ovarian dropsy, but a fibroid mass imbedded in the walls of the uterus. To prevent you, if possible, making such a great and grave mistake, let me request your especial attention for a few moments, while I briefly enumerate and explain the several signs and points of distinction which will enable you to establish a correct differential diagnosis between these two forms of a disease.

(a.) *Difference in Consistence.*—Fibroid tumors are solid, massive and heavy, for they rarely contain cysts or cavities,

but are usually made up entirely of solid fibrous tissues, and when such a tumor is not fixed by inflammatory adhesions, you can usually discover this characteristic of its consistence by moving it from side to side through the abdominal wall, or by examining it simultaneously through the vagina, and from the external surface. I have just said that fibroid tumors of the uterus only rarely contain cysts. Let me add that these cysts are never large. But a large fibroid sometimes grows loose, as it were, uncompact, and oedematous, and presents an imperfect and deceptive feeling of fluctuation, a state of matters, however, which is very far from being common. Ovarian tumors, on the other hand, are soft and fluctuating in the majority of cases that come before you; that is, when the smaller cysts have coalesced to the formation of one or two prominent and preponderating cavities. But when the tumors are still small, and made up of a mass of little cysts, they are more dense and elastic, and if in making your diagnosis of such a tumor, you depended too much upon the consistence of it, you would be extremely apt to fall into error, against which you must guard yourselves by attending to other distinctive marks, such as

(b) *Difference in Outline.*—Although on ovarian tumors one or more projections or protuberances are often to be felt on the surface, indicating separate primary cysts, or the position of secondary cysts on the wall of the larger and principal cavity, or cavities, yet, on the whole, the surface is felt to be comparatively equable and smooth. Large fibroid tumors, on the contrary, are more rough and modulated, being made up usually of a large number of small fibrous modules; and even where one of the masses has come to be developed so much more than all the others as to present a large extent of smooth, uninterrupted surface, you can still frequently find a number of small fibroids growing up beside the large one. Fibroid growths of the uterus seldom, indeed, occur single. The walls of the uterus usually contain several of them at once, in different states of advancement and size. The smaller fibroids sometimes are placed on the surface of the larger of the series. More frequently they can be felt, like hard balls or masses of varying shape, seated upon or springing from other parts of the uterine surface. We never have this last characteristic symptom in ovarian dropsy—never, that is to say, smaller tumors quite separate from the large tumor. When a group of fibroids are present, the tumor which they form is usually, also, far more irregular in shape, and much more angular in outline than the comparatively spherical tumor usually formed by dropsy of the ovary. The indications derived from the

contour of the tumor are thus among the most certain signs of its real nature. But they are not always to be entirely depended on. For, on the one hand, when fibroid tumors take on an enormous degree of development, and the distinctions between its constituent masses become diminished, they may, as I hinted a minute ago, come to feel almost as smooth and equable as any cystic tumor; and when, at the same time, they become soft from the infiltration of fluid, as sometimes happens in such cases, the resulting softness and apparent fluctuation may easily lead the most experienced into error. On the other hand, when ovarian tumors are still of moderate size, and at that stage, when several cysts of nearly equal size are, as it were, struggling for the pre-eminence, the prominences they present might mislead to the belief that they are uterine fibroids.

(c.) *Difference in Sounds heard on Auscultation.*—The stethoscope gives us one of the best marks of distinction that I know of between ovarian and fibroid tumors. On listening through the abdominal wall over a fibroid tumor large enough to reach above the pelvic brim, you can often hear a rushing sound precisely resembling the sound heard in the gravid uterus, and known as the placental or uterine bruit. This sound occurs, as we shall see afterwards, in fibroid tumors growing within the muscular walls of the uterus, and not in the sub-peritoneal variety of the disease. But I never yet heard a sound resembling that bruit on auscultating over an ovarian tumor; and indeed I never heard any sound at all except, it might be, the pulsating sounds of the large abdominal arteries. Drs. Churchill, Scanzoni, and others, have averred that they have heard a distinct bruit emitted by an ovarian tumor, but they had not an opportunity of verifying their diagnosis by a post-mortem examination; and we may still doubt whether the tumors from which the sound proceeded were really ovarian. Whenever you hear that sound, therefore, in the case of an abdominal tumor, and you know that the patient is not pregnant, you have strong reason to conclude that the tumor is a uterine fibroid, and not a cystic ovarian tumor.

(d.) *Difference in Relation to Connection with the Uterus.*—Careful vaginal exploration will give you some further indications of much value in enabling you to distinguish between ovarian and fibroid tumors. If the uterus be within reach of the finger, or, still better, if you can introduce a sound into its interior, you will find that in the case of fibroid tumors the whole mass can be felt through the abdominal wall to be moved from one side to the other, according to the motion imparted to the uterus by the sound; while, if the tumor be

ovarian, the uterus alone is moved, and the mass, as felt through the abdomen, remains fixed and motionless. Or, on the other hand, by keeping the finger in contact with the os uteri, and making movement of the mass from without, you can decide as to their connection from the consentaneous movements then felt; or, if the uterus remain unaffected by the movement of the abdominal mass, then you know that they are independent of each other, and that the tumor is probably attached to the ovary.

(e.) *Difference in Relation to Position of the Uterus.*—Formerly, I used to think that we had another sign distinctive of the existence of an ovarian tumor, when the mass was felt lying behind the uterus; not that fibroid tumors might not occupy the same position; but they are usually more diffused through the walls of the uterus, and lie as often in front as behind; and I imagined that ovarian tumors would not be found to take up a position in front of the uterus. But I have seen several cases in which an ovarian tumor had become pediculated, and, having passed round the uterus, tilted the organ backwards and retained a position in front of it, between the uterus and the bladder.

(f.) *Difference in Size of the Uterus.*—Perhaps one of the most certain and most reliable signs of fibroid tumors of the uterus, as distinguished from ovarian growths, is elongation of the cavity of the uterus, which is very generally present in connexion with intramural and submucous fibroid tumors. This elongation you can ascertain by passing the uterine sound. When examining a uterus which is the seat of an intramural or submucous fibroid tumor, you will find that the instrument can be pushed much further into the cavity than in cases where the womb is unaltered, and you can thus determine that the organ is spun out and enlarged like the pregnant uterus, so that instead of being only two and a-half inches long, it admits the sound for a distance of three, or even sometimes as far as six or eight inches. Such a decided enlargement of the uterus I have never found among all the many cases of ovarian dropsy that I have had occasion to examine, and I regard it as of itself almost sufficient to show the tumor to be uterine and not ovarian in its seat. Cruveilhier, indeed, has found on dissection some instances in which the uterus was enlarged in patients who had died with ovarian dropsy, but such cases, though enough to put us on our guard, are certainly rare; and I repeat, that when you find the sound passing into the uterus four or five inches, you may almost be quite certain that the doubtful tumor grows from the uterus and not from the ovary.

4. *Ascites*.—A large and soft ovarian tumor, distinctly fluctuating, and filling up a large space in the abdominal cavity, is not likely to be ever mistaken for the gravid uterus, or for a fibroid uterine tumor. But you will occasionally find yourselves for a few minutes in doubt as to whether in such a case you have to deal with an ovarian growth, or with a collection of ascitic fluid lying free in the abdominal cavity; and it sometimes becomes a matter of importance to know how you are to make a diagnosis between ovarian and abdominal dropsy. When you are thus doubtful of the true nature of the case, you will be guided to a correct diagnosis by various considerations, as,

Firstly.—By observing the form which the abdomen assumes when the patient is made to lie supine. Ovarian tumors, like the pregnant uterus, make the yielding anterior abdominal walls project forward in the centre, sometimes, however, in an almost angulated and irregular form; while the abdomen is usually flattened out when filled with ascitic fluid, and any bulging that exists is seen at the sides, from the tendency that the free and unencysted fluid has to gravitate to the lowest level.

Secondly.—If you make percussion over a large ovarian tumor, you will find that the sound is dull around the umbilicus, and over all that part of the abdomen where the tumor comes in contact with the internal surface of the anterior wall, while at the sides and above, the intestines which have been pushed aside and upwards by the tumor, yield a tympanitic sound. If you percuss the abdomen when it is filled with an ascitic collection, on the other hand, you obtain a resonant sound in front around the umbilicus, while at the sides the sound, from the line of the water-level downwards, is dull, because the fluid has sunk backwards, and allowed the intestines to float upwards towards the anterior surface. Or if the abdomen be so much distended with fluid as to prevent the bowels from reaching the abdominal wall, and the sound emitted on percussion around the umbilicus be dull, yet by pressing the wall backwards, and thus displacing some of the fluid, you can at last arrive at the bowels, and then you will obtain the resonant percussion tone. If you have still any doubt as to nature of the case, you may,

Thirdly, succeed in resolving it by causing the patient to move from side to side, when you will observe the free ascitic fluid shifting its position, and sinking down to the side on which the patient lies; and this change of position of the fluid you can easily detect by marking the line at which the dull and tympanitic sounds meet when the patient lies in any particular

position, and finding it to vary when she turns to one or other side. On the other hand, in ovarian dropsy the relative line of dullness and resonance on percussion is not materially altered by these changes of position in the patient. In fact, you will remember easily these distinctive marks between peritoneal and ovarian dropsy, if you will merely hold in recollection,—1. That the dropsical effusion obeys in the abdomen the common laws of the gravitation of fluids to the most dependent parts; 2. That in cases of ovarian dropsy the fluid is inclosed within an isolated cyst or series of cysts, and does not move and gravitate through the general cavity of the abdomen; and, 3. That on the contrary, the effusion in ascites or peritoneal dropsy is contained within the general cavity of the abdomen, and moves from one part to another of that cavity, in correspondence with changes in the mere position of the patient; while the intestines—distended with air, and specifically lighter—float more or less on the surface of the fluid, as may readily be ascertained by percussion. There is only, let me add, one class of cases where these physical signs may prove insufficient to guide you to a correct diagnosis—those cases namely, where the peritonitic effusion is associated with a tubercular affection of the mesentery and peritoneum, or the omentum has become the seat of adhesions, which prevent the bowels from floating forward when the patient lies supine. A knowledge of the patient's previous history, and her general constitutional condition, will often serve to enable you, however, to decide between the two forms of disease; for on inquiry you will find that when the collection of fluid is ascitic in character, the patient is suffering, or has suffered at some previous period or periods, from renal, or more frequently still, from some form of cardiac or hepatic disease, which you may still be able to recognise even after the abdomen has become much distended, and that the distension has begun at the most dependent part of the cavity and spread gradually and equably upwards: while in the case of ovarian dropsical collections, the anamnesis teaches that the disease first showed itself in the form of a circumscribed and rounded growth, seated originally in one or other iliac region, and at length attaining such a size as to fill up the whole cavity of the abdomen.

5. *Tympanitis of Spurious Pregnancy.*—You would hardly suppose it likely that a tympanitic distension of the bowels could be mistaken for a solid ovarian tumor. Yet such an error has not unfrequently been fallen into. I was once called to see a lady of high rank, living at a great distance from this city, who had been pronounced by her medical attendant to be the subject of an ovarian dropsy, and her family had been

thrown into the greatest distress in consequence. The abdomen was very large; but on percussion, both anteriorly and laterally, it everywhere yielded not a dull but a tympanitic sound; and the supposed cystic tumor thus resolved itself into a gaseous accumulation in the intestines, which on further investigation proved to be associated with all the other symptoms that I described to you a short time ago as characteristic of pseudocyesis, or spurious pregnancy. That is an instance where a grave error in diagnosis was fallen into, but where, fortunately, no corresponding grave error in practice was committed. But such a mistake in diagnosis has led to most painful consequences when a surgeon has cut open the abdomen with the view of performing the operation of ovariectomy in a patient whose most grave disorder was the tympanitic distension of the intestines so frequently seen in cases of pseudocyesis. You may remember my telling you, when lecturing on that subject, that no less than six cases have been put on record where patients had been subjected to the dreadful operation I have just referred to, ere it was discovered that the tumor intended to be removed had no existence at all. If you bear in mind the possibility of the error, the difference of the tones elicited on percussion will always serve to guard you against the chance of making such a dangerous mistake.

6. *Hydatids*.—The variety of abdominal tumor which perhaps you will find the greatest difficulty of all in distinguishing from an ovarian growth, is one, fortunately, of but rare occurrence in practice. The tumor may be of large size, and it presents all the physical characters of a cystic ovarian tumor; but if you could have an opportunity of opening the abdomen, you would find that it was formed by a hydatigenous degeneration of the omentum. Hydatids of the omentum, then, and partial encysted ascitic collections, which are usually associated with hydatigenous degeneration of some portion of the peritoneum, form a class of tumors which no difference in physical signs, and probably, no difference in functional symptoms, will enable you to distinguish from cystic degeneration of the ovary. In the case of the omental growth, however, you may be enabled to form a correct diagnosis by being told by the patient that the tumor began to grow high up in the abdominal cavity above the umbilicus, where it was first felt, and whence in growing it has extended always downwards; instead of beginning low down in the pelvis, and growing upwards, as is seen in the case of ovarian tumors. Or, if no inflammatory adhesions have taken place, you can perhaps push the tumor upwards in the abdominal cavity to such an extent as to convince you that it can have no attachment below, and that it cannot spring

from any pelvic organ. In the case of the encysted ascitic collection, you can sometimes, I believe, only determine the real nature of the case by tapping the cyst, and finding the hydatigenous bodies in the fluid that escapes.

7. *Fæcal Collections in the Intestines.*—Some of you may remember, that during the winter we had in the Hospital, a patient who was sent in from the country, and presented on admission the color and appearance of a person laboring under some malignant disease. The facial expression might have led you to believe that she was the subject of a cancerous diathesis. She had a tumor in the left hypogastric region about the size of a fist. But under the use of croton-oil it readily disappeared, and proved to be only a mass of fæces in the colon. You might suppose that it would be difficult to mistake such a tumor for any kind of morbid growth, and you might imagine that the patient would be suffering from such a degree of constipation as at once to indicate its real nature. But there is not of necessity any degree of constipation present. On the contrary, there is sometimes diarrhœa. Dr. Abercrombie told me he once attended, with some other physicians, a case where there were large swellings felt in the abdomen, and the patient suffered severely from diarrhœa. After death the swellings were found to be formed merely by hardened deposits of fæcal matter in the sacculi of the large intestine, the central tract through the bowel being left free; and that he was then in attendance upon a patient suffering from obstinate diarrhœa, who at the same time had large scybalous masses accumulated in the colon. And you can readily understand how large collections of hard fæcal matter lying long in any part of the large intestine, should at length give rise to such an amount of irritation there as to produce an attack of diarrhœa; and when this has become established, the original cause of it will readily be overlooked. The peculiar feeling of such a tumor will generally enable you to decide as to its true character; it feels like no other tumor that I know of. On being examined either through the abdominal walls or through the rectum, it is felt to be hard and resistant, but if one finger be pressed steadily upon it for one or two minutes, it will at last indent like a hard snowball, and, as there is not the slightest elasticity about it, the indentation remains after the pressure is removed. If any doubt should still remain, the persevering use of aperients will clear up for you the diagnosis by causing the mass to be dissolved and carried off.

III. *Contribution to our Knowledge of Digestion*. By GEO. HARLEY, M. D., Professor of Medical Jurisprudence in University College, &c.

AT the meeting of the British Association for the Advancement of Science, held at Leeds, in September, 1858, I read a paper, entitled, 'Notes of Experiments on Digestion.' The observations that I then laid before the members of the Association, were the result of a series of experiments which I had performed during the preceding year, on the nature and properties of the more notable of the digestive fluids. At that time I contented myself with merely directing attention to those points which appeared to me to be the most important, in consequence either of their differing from the commonly received doctrines, or of their intending to elucidate some of the questions which were still *sub judice*. The communication, however, had no pretension to be considered as a monograph on the digestive process. It was merely a collection of jottings from my note-book. On the present occasion I purpose relating a few of the facts then alluded to, together with the results of some experiments since performed, limiting myself, as on the former occasion, to a mere statement of naked facts, reserving the explanation of them for a future occasion.

In order to condense my material into the smallest possible space, and prevent repetition, I shall treat of the subject under three heads. 1st, *Buccal Digestion*; 2nd, *Stomachal Digestion*; 3rd, *Duodenal Digestion*.

I. *Buccal Digestion*.

The experiments on the salivary secretion were chiefly made with my own saliva. It was collected between meals, and was of course "mixed,"—that is to say, composed of a mixture of the secretions from the parotid, submaxillary, and sublingual glands. The specific gravity of the saliva, after filtration, varied between 1003·9 and 1005·0. (Longet and Bernard give the specific gravity of the human saliva at 1004 to 1008.)

On making a qualitative analysis of this mixed secretion, I was able to confirm the statement of Berzelius, that it contained a peculiar animal ferment—*ptyalin*; of Brande's, that it contained albumen; and of Dr. F. Simon, that it likewise contained casein. The presence of the latter substance has been denied by some recent observers, but I was able to satisfy myself of its existence, by adding lactic acid to saliva from which the albumen had been previously removed.

On making a quantitative analysis of my own saliva, I found that it contained in 100 parts,

Water,	.	.	.	.	.	.	.	99.381
Solids,	.	.	.	.	.	.	0.669	
<hr/>											
Ferment,	.	.	.	.	} Organic matter,			0.391
Albumen,							
Casein,							
Mucus and Epithelium,							
Chloride of Sodium,	.	.	.	.	} Inorganic matter,			0.278
Sulphate of Potash,							
Sulphocyanide of Potassium,							
Phosphate of Lime,							
“ Magnesia,	.	.	.	.			
And Iron,	.	.	.	.			
								<hr/>			
								100.000			

Bernard says that iron is not a normal constituent of human saliva. I have tested for it in the saliva of four individuals whom I considered healthy, and never found it absent. Of course it was only the ashes, after incineration of the saliva, that I tested; for, until the organic matter is destroyed, the iron gives no indication of its presence with the ordinary re-agents. The last mentioned author has made a most erroneous statement with regard to the sulphocyanide of potassium. He says that this substance can only be found in saliva that has begun to decompose, and that if detected in freshly-secreted human saliva, it is on account of the person from whom the saliva is taken having bad teeth, the decayed matter of which has caused the decomposition of the secretion while still in the mouth. I have not a single bad tooth, and although I have tested my saliva not less than twenty times, have invariably detected in it sulphocyanide of potassium. Moreover, I one day examined the saliva of eleven of the gentlemen attending my Practical Physiology class, and it was present in each case. Some of the gentlemen had bad, some had good teeth,—and, curiously enough, the one who happened to possess the worst set of teeth—nearly all the molars being decayed—had the least amount of sulphocyanide in his saliva.

Digestive Powers of Saliva.

AMYLACEOUS FOOD.—The peculiar action of saliva on amy-laceous food, I need scarcely say, I confirmed. One part of

freshly-secreted healthy human saliva converted a saturated solution of boiled starch into grape sugar, at a temperature of 38° Cent., in 100 seconds. Its action on raw starchy matters is exceedingly slow and imperfect. It is, I believe, on this account that uncooked fruit, especially when unripe, is so prone to bring on an attack of indigestion.

ADIPOSE FOOD.—It is very generally believed that the secretion from the salivary glands does not assist in the digestion of fats. The results of my experiments have led me to agree with Monsieur Longet in believing that the saliva has—although only to a very limited extent—the power of emulsifying fats. This power, I believe, is entirely due to its alkaline reaction, and consequently can be of comparatively little moment in the digestive process.

ALBUMINOUS FOOD.—Saliva is said to have no action upon protein substances. When acidulated with hydrochloric acid—fifteen drops to the ounce,—and kept in contact with slightly boiled albumen of egg, during forty-eight hours, at a temperature of 35° Cent. (the temperature of the human body), I find that it transforms a small quantity of the albumen into peptone. The manner of detecting this transformation of albumen I shall presently allude to.

Bidder and Schmit estimate the quantity of saliva secreted by an adult in twenty-four hours at from 2 to 3 lbs. I have performed some experiments with the view of ascertaining this point, and find that on an average I can secrete in the course of four hours, between meals, 6 ozs. of saliva, of a specific gravity of 1004. This experiment is performed without putting any sialogogue in the mouth—merely by sucking the tongue. Supposing the secretion of saliva to continue at the same rate throughout the day, 6 ozs. in four would be equal to about 2½ lbs. in twenty-four hours. As very little is secreted during sleep and between meals, I regard Bidder and Schmidt's estimate as far too high. I imagine the probable quantity secreted in the twenty-four hours by an adult is from 1 to 2 lbs.

In reply to the question whether the salivary glands have the power of excreting foreign matters from the blood, Bernard has specially pointed out that they possess this property with regard to the iodide of potassium. He says, that after this salt is taken into the stomach, it appears in the saliva long before it can be detected in the urine. I have carefully repeated this experiment several times, but with somewhat different results from those got by Bernard. The following may be cited as an average example:

Having first completely emptied the bladder, I took 5 grains

of iodide of potassium, dissolved in 6 ozs. of water. After rinsing the mouth, over 15 ozs. of water were drunk. The saliva and urine were then tested alternately every minute. In ten minutes exactly the salt was detected in the saliva, and in one minute later—the next testing—it was also found in the urine. I think, therefore, we are justified in saying, contrary to Bernard, that the kidneys excrete iodide of potassium from the body as quickly as the salivary glands. Both organs excreted the iodine in the combined form. If the salt was decomposed in the body, the iodide must therefore have become again united with the potassium, or some other base, either before or at the time of its excretion.

After twenty-four hours, the presence of the iodide could still be detected in both secretions, and in forty-eight hours it was found in the urine only. On one occasion, however, it was present in the saliva after seventy-two hours, but its presence in the urine was doubtful. Some experiments made with the iodide of potassium in the form of a pill, gave very unsatisfactory results. Its presence in the saliva could never be detected in less than half an hour, and on one occasion it did not appear at all.*

II. *Stomachal Digestion.*

In order to be able to study natural digestion, I made a gastric fistula in a dog's stomach, and placed in it a silver canula. In eleven days after the operation, the animal was ready for experiment. The fluid found in the dog's stomach, during fasting, had a slightly alkaline reaction. When the animal was prevented from swallowing his saliva, however, the mucous secretion of the stomach was invariably neutral. The true gastric juice—which is only secreted during digestion—was of course always acid.

With the view of obtaining the gastric juice as pure as possible, in order to subject it to analysis, the dog was kept fasting during thirty-six hours. The stomach was then thoroughly washed out with water injected through the fistula, and afterwards tripe, carefully freed from fat and mucous membrane, was introduced by the opening. The dog was gagged in order to prevent any saliva from getting into the stomach, and he was not allowed anything to drink while the gastric juice was

* From a variety of experiments which I have made on the rapidity with which substances act, I have been led to the conclusion that the form of pill is the very worst that can be adopted in administering a remedy. I have therefore almost entirely discontinued it in practice.

being collected. Still further to insure the perfect purity of the secretion, it was filtered before being analysed.

100 parts of gastric juice so obtained were found to contain—

Water,	.	.	.	.	.	97.288
Solids	.	.	.	.	2.712	
Organic Matter, chiefly pepsin	.	.	.	.		2.247
Chloride of Sodium	.	.	.	.	Inorganic Matter,	0.465
“ Potassium	.	.	.	.
Phosphate of Lime	.	.	.	.
“ Magnesia	.	.	.	.
And Iron	.	.	.	.
						<hr/> 100.000

Digestive Powers of Gastric Juice.

AMYLACEOUS FOOD.—Gastric juice does not possess the faculty of transforming amylaceous matter into sugar. Notwithstanding its acid properties, and its power of neutralizing the alkaline saliva, it does not, however, prevent the latter secretion, after entering the stomach, from changing starch into glucose; indeed, I found that saliva, mixed with an equal quantity of gastric juice, acted almost as quickly upon boiled arrowroot as when no gastric juice was present.

SACCHARINE FOOD.—Gastric juice transforms cane into grape sugar. The pepsin takes no share in this transformation. It is the freed acid which alone acts upon the saccharine matter, for as soon as the acid is neutralized, the transformation ceases to occur. Gastric juice has no influence over sugar of milk or grape sugar.

ADIPOSE FOOD.—Fats are liquefied in the stomach partly by the cell walls being dissolved through chemical and mechanical agency, and partly by the elevated temperature of the organ; they are not, however, emulsioned. Dr. Marcet has recently shown that the neutral fats are changed into fatty acids in the stomach.

ALBUMINOUS FOOD.—The chief action of the gastric juice is exerted upon protein substances. It possesses the faculty of rendering them soluble in water; not simply by dissolving, but by transforming them. When an acid acts upon coagulated albumen, it merely dissolves it; but if pepsin be coupled with the acid, it transforms the albumen into another substance—peptone—having entirely different physical and chemical properties. Longet has pointed out an easy way of distinguishing between albumen dissolved and albumen digested. Digested albumen is endowed with the faculty of preventing

the sulphate of copper and potash test from indicating presence of sugar, while at the same time it gives to the solution a beautiful violet color. Dissolved albumen possesses such power. At first, this test appeared to me to be a valuable one, and does so still, notwithstanding that a part of the glory has been shorn from it, by the discovery that gelatine acts like digested albumen. This fact, which was pointed out by Bernard, I have confirmed. Moreover, I have gone a step further, and found that there are several substances endowed with the faculty of masking the presence of sugar when the sulphate of copper and potash test is employed for its detection; among these, casein and meta-albumen stand out as eminent. But I find that albumen, acted upon by an acid in the presence of any animal (ptyalin) or vegetable (yeast) ferment, has though in a much less degree, the same property. Nay, we have observed that protein substances undergoing putrefaction not unfrequently give the beautiful violet color with Longet's test and at the same time conceal, to some extent, the presence of sugar. Lastly, I have found that even with the true peptone test must be carefully employed, as the power which it possesses is limited. A given quantity of peptone can only render a definite amount of sugar. Whenever an excess of saccharine matter is present, its usual action upon the copper becomes manifest.

The power which the gastric juice has of coagulating is entirely due to the action of its free acid. Neutral peptone I find, does not coagulate casein. The next point to which would advert is the quantity of gastric juice secreted by the stomach in twenty-four hours. According to Bidder and Schmidt, the daily secretion of gastric juice is equal to one-quarter of the weight of the whole body. If, therefore, the estimate given by these observers be correct, a man weighing twelve stone ought to secrete no less than three stone of gastric juice in twenty-four hours. This appearing to me to be an excessive quantity, I made the following experiment upon a dog, which, although it had had a gastric fistula for six months, was in excellent health and condition; the animal weighed twelve pounds. After washing out the stomach, a quantity of well cleaned tripe was introduced by the artificial opening. In five hours, $4\frac{1}{2}$ oz. of gastric juice were obtained. The secretion ceased after this time, and the animal which had been prohibited drinking any water during the experiment, appeared very thirsty: 4.5 oz. in five hours, if calculated at the same rate over the entire day, would be equal to 21.6 oz. in twenty-four hours; in round numbers, one-ninth of the weight of the dog. Lehmann estimates the quantity of gastric juice secreted

in twenty-four hours at a little less, namely, one tenth of the animal's weight. I think, however, that even this estimate is too high, for the secretion of gastric juice does not continue during night and day, being interrupted except at the time of digestion. I am inclined, therefore, to estimate the daily secretion of gastric juice as a fifteenth of the weight of the whole body.

WHY IS THE STOMACH NOT DIGESTED? We know that it is not on account of its being ordinarily indigestible, for under circumstances it digests itself. That it is not because the organ is living, Bernard has shown. He introduced the hind legs of a living frog through the fistulous opening in a dog's stomach; after a couple of hours, notwithstanding that the animal was still alive, the limbs were found digested away. This experiment has been repeated by Dr. Pavy and myself, and confirmed. The living tissues of warm-blooded animals are also digested. If, for example, some gastric juice be taken from an animal's stomach and introduced under the skin of its neck or belly, in a very few hours the fluid will be found to have digested its way out, and left a hateful-looking wound.

This experiment I have also repeated and confirmed. If, then, the non-digestion of the living stomach is neither on account of its being indigestible nor a living tissue, is there anything contained in the organ which prevents the gastric secretion from attacking its walls?

Bernard believes that it is on account of the organ being lined with a layer of epithelium cells, not readily acted upon by gastric juice. And that as layer by layer of these cells are shed, others are ever ready to fill their place. The cells, he imagines, pour forth a quantity of mucus which aids in bringing about the dissolution of the stomach. This opinion, although adopted by all subsequent writers, is opposed to the results of experience. In the first place, proof is wanting that the mucus lining the stomach resists the chemical action of the gastric juice. Bernard's own experiment shows that epithelium covering another part of the body entirely lacks such power, and I am unacquainted with any evidence to prove that the epithelium cells of the stomach are not as readily acted upon by the gastric juice as those covering the frog's skin. As the present communication consists of the notes of a series of experiments which are intended to appear at a later period in a more complete form, I shall confine myself at present to stating my belief that it is chiefly, if not solely, the mucus which protects the stomach from the chemical action of its own gastric juice. On killing an animal, such as a rabbit, in full digestion, it is not uncommon to find a thick layer closely surrounding the

bolus of food, in addition to that covering the walls of the organ. In the pig I have occasionally seen the layer of mucus lining the stomach at least one-eighth of an inch in thickness. In proof of its being the mucus chiefly, and not the epithelium, I may mention, that if a stomach be divided into two parts and from one of the halves the mucus be carefully removed, with as little as possible injury to the epithelium, while the other half is left intact, it will be found, on making each into a sort of bag, and filling it with pure gastric juice, that a few hours' exposure to an elevated temperature will suffice for the solution of the half from which the mucus was removed, whereas the other, notwithstanding a similar treatment, will remain unacted upon.

III. Duodenal Digestion.

ACTION OF THE BILIARY SECRETION.—Bernard, in his lectures, already so frequently referred to, has revived an old theory regarding the action of bile upon chyme. He states that when the bile comes in contact with the chyme on its escape from the stomach into the duodenum, it (the bile) precipitates the digested azotized matters, and not these only, but even the pepsin also. Corvisart questions the correctness of this opinion, and says that the bile, instead of precipitating the organic substances contained in the chyme, is in reality itself precipitated by the acid of the latter. I have performed several experiments with the view of ascertaining which of these observers is correct, and the results have led me to adopt Corvisart's opinion. I may cite the following as the chief reasons for my so doing :

1st. Alkaline human bile, when added to pure chyme, gives a copious precipitate.

2d. The same bile added to chyme, the acid of which has been previously neutralized, gives a turbidity; but no precipitate.

3rd. Alkaline bile added to a neutral solution of pepsin, gives a turbidness; but no precipitate.

4th. Alkaline bile added to distilled water, gives a turbidness; but no precipitate.

5th. Alkaline bile added to water, acidulated with hydrochloric acid, gives a copious precipitate.

On employing alkaline bile from the sheep and the snake (*coluber natrix*) instead of that from the human subject, I obtained precisely similar results; I think, therefore, we may safely conclude that the precipitate which bile gives with chyme, is entirely due to the presence of the acid in the latter. And

that this precipitate consists neither of the peptone nor pepsin, as Bernard supposes; but of one or more of the constituents of the bile, as Corvisart believes.

AMYLACEOUS FOOD.—I have confirmed the statement that bile does not transform starchy matters into sugar.

ADIPOSE FOOD.—The action of bile upon fats being a question still *sub judice*, I made several experiments with this secretion, and liquid as well as solid fatty matters. The results I obtained were very contradictory; but on the whole led me to the conclusion that bile has, to a limited extent, the property of emulsifying fats. Since my first experiments were performed, Dr. Marcet has confirmed a very interesting fact, first noticed by Lentz, which at once explains why the results of experiments with bile and oleaginous bodies are so captious. He found that it is only the fatty acids, and not the neutral fats which form an emulsion with the biliary secretion. On repeating some of my experiments, with the light thrown upon the subject by Lentz and Marcet, I was no longer troubled with contradictory results.

ALBUMINOUS FOOD.—Bile has not the power of digesting albumen. When added to gastric juice, bile greatly diminishes its solvent action upon protein substances. Most probably by neutralizing the acid, without which gastric juice cannot act.

PANCREATIC SECRETION.—Pancreatic juice obtained from a fistula, which I established upon a dog in the usual manner, had the appearance described by Bernard. It was a clear, pale, opaline, slightly glutinous liquid, with a well marked alkaline reaction. I confirmed the following facts:

AMYLACEOUS FOOD.—Pancreatic juice, as first pointed out by Valentin, transforms starchy matters into sugar with much greater rapidity than saliva or any other known ferment. It continues its action, too, upon boiled arrowroot starch at a lower temperature than other ferments. Neutralization with gastric juice does not hinder its transforming amylaceous substances into sugar.

ADIPOSE FOOD.—As pointed out by Eberle, in 1835, and confirmed by Bernard in 1848, pancreatic juice emulsifies fats, and makes with oil an artificial chyle, closely resembling what we find in the lacteals.

ALBUMINOUS FOOD.—In 1835 Eberle discovered that the secretion from the pancreas fluidified chyme loaded with peptone. In 1836 Pappenheim and Purkinje found that it had the power of digesting albuminous substances. I have confirmed both of these statements. In 1857 Corvisart published a monograph, entitled, "On the Digestion of Azotized Alimentary Bodies by the Pancreas," in which he relates a number of

experiments upon animals, the results of which led him to the conclusion that pancreatic is a more powerful solvent of protein substances than gastric juice. I have repeated, and, *to a certain extent*, confirmed his results. My most successful experiment was the following: After rendering a strong healthy cat, while fasting, insensible with puff-ball smoke, I opened the abdomen and placed a ligature on the duodenum, close to the pylorus. The intestine was now emptied as completely as possible, by drawing it through the fingers; a second ligature placed near to the commencement of the jejunum, and a third about twelve inches further down. Into the two loops of intestine thus formed, equal portions of moderately hard white of egg were introduced. A third loop of intestine, close to the last, was then secured by another ligature, and the wound in the abdominal parietes closed up. In twenty hours the animal was killed by section of the medulla oblongata. On opening the abdomen scarcely a trace of peritonitis was visible. The duodenal portion of the intestine was distended with fluid of a slightly acid reaction, and having much the appearance of chyme without the intermixture of bile. No fragments of egg remained. On filtration I obtained from it a clear opalescent liquid not at all unlike pancreatic juice, of which no doubt it chiefly consisted. It transformed starch readily into sugar. It gave a white precipitate with alcohol, alum, acetate of lead, and gallic acid. When tested for digested albumen, by Longet's test, it gave only a faint purple.

The second portion of the intestine included in the ligatures contained no liquid. The fragments of egg remained in large lumps, but were much changed in appearance. They had become hard, friable, and gritty to the feel. When pounded in a mortar with a little water, and filtered, the solution, on Longet's test being applied, yielded slight indications of the presence of peptone.

The third loop of intestine, into which nothing was introduced, remained empty.

The pancreatic juice appears therefore to be the most remarkable of all the digestive fluids, for it seems to unite in itself the functions of the salivary, gastric, and biliary secretions.

I have refrained on the present occasion from making mention of the experiments which have been recently made, with a watery extract of the pancreas of various animals, by Keferstein, Hallwachs, Funke, Meissner, and Brinton, as I purpose giving to them due attention elsewhere.

CHRONICLE OF MEDICAL SCIENCE.

MEDICAL PATHOLOGY AND THERAPEUTICS.

1. *On the employment of Iodide of Potassium in Diseases of the Brain in Children.* By JOHN COLDSTREAM, M. D., F. R. C. P. E.

It is now upwards of twenty years since iodide of potassium was commended by Roeser and others as a remedy of special power in hydrocephalus. At that time I began to use it in my own practice, was soon convinced of its utility, and have continued to employ it ever since with increasing satisfaction. The results I have obtained have been so much more decidedly favorable than those which I had been accustomed to see under the employment of depletion, calomel, and purgatives, that I have been surprised to find comparatively few references to the treatment of diseases of the head by this agent in the more recent works on the practice of medicine. I have met with but a small number of practitioners who seem to recognize it as a remedy of marked efficacy.*

* Dr. Risdon Bennett, in his valuable treatise on acute hydrocephalus, published in 1843, states that his experience had led him to conclude that iodine and the iodide of potassium were remedies worthy of more extended trial than had then been given them. He refers to cases published by Roeser (*Hufeland's Journal*, April, 1840), in some of which recovery took place from very desperate conditions of the system, after the administration of large doses of the iodine: also to certain cases reported in *Schmidt's Jahrbücher* for 1840, as having been treated successfully in Riga with the combination of iodine and calomel. Dr. Copland (*Dict. of Pract. Med.*, vol. i., p. 675) remarks:—"In several cases approaching the subacute form of hydrocephalus, I have prescribed a solution of the hydriodate of potash in distilled water, with or without a little iodine added to the solution, in small but frequent doses, and with evident advantages." In their *Practical Treatise on the Management and Diseases of Children* (1842), Drs. Evanson and Maunsell give the results of their experience in the following terms:—"In either of the forms of hydrocephalus" (acute or chronic), "and even in the second stage of the acute variety, we much prefer the use of iodine to that of mercury, and have seen some cases of its signal success. Iodine, to be effectual, however, must be largely employed, both internally and externally. The protu-ioduret of mercury would seem to present particular advantages. The ointment of bin-iodide of mercury appears eligible for producing speedy irritation over the scalp."

More recently, Dr. Willshire (*Clinical Observations*, *Medical Times*, August, 1847) reported very favorably of the results he obtained in treating hydroce-

My own experience has gradually led me, for a considerable time past, to its employment, almost exclusively, in the treatment of those numerous ailments of children, which we cannot but regard as indicative of a tendency to hydrocephalus. In all cases in which, from the course of symptoms, I have reason to believe that the central organs of the nervous system, or their envelopes, are in any degree affected with strumous inflammation (tubercular cerebritis, or meningitis) or its consequences, after moderate purging, and perhaps application of leeches to the head, I am in the habit of prescribing the iodide, in doses of from half a grain to three grains, every three or four hours, generally dissolved in some carminative water, and continuing it in doses, varied according to the symptoms, for many days, or even until convalescence is fully established; and I am quite satisfied that, under this treatment, with the occasional addition of blisters to the shaven scalp, I have seen far more prompt and decided effect produced upon the disease than I used to see under the old treatment.

phalus with iodide of potassium combined with iodine,—iodine ointment being at the same time applied over the shaven scalp. The learned *Practical Treatise on Diseases of Children*, by Dr. Forsyth Meigs of Philadelphia, while it contains an acknowledgment of the author's want of success in treating tubercular meningitis with iodide of potassium, has also the following remarks:—"It is, nevertheless, a remedy which ought to be tried. I would recommend its use in doses of a grain every three or four hours for children of two years of age. It ought to be begun with as soon as the acute symptoms have been sufficiently reduced by bloodletting and purging, and to be continued in connection with counter-irritants, and cold to the head."

In discussing the treatment of tubercular meningitis, Dr. Wood of Philadelphia (*Treatise on the Pract. of Med.*, 1855) says—"Iodine should be employed in this form of meningitis from its supposed influence on the scrofulous habit of body, and in the hope that, if it do not promote the absorption of the tuberculous matter, it may possibly prevent its deposition. I would commence with it in such doses as the stomach of the child could bear, and continue it throughout the treatment. The iodide of potassium, or the compound solution of iodine (*U. S. Ph.*) should be employed. Iodide of mercury might, with great propriety, be substituted for the calomel, at the stage at which it is desirable to aim at the mercurial impression; and, in this case, the other preparations of iodine should be abandoned." One of the most accurate and practical amongst continental writers on diseases of children, Dr. Alois Bednar of Vienna, advises the substitution of iodide of potassium for calomel, in the advanced stage of meningitis, in doses of one, two, or three grains every half hour (*Lehrbuch der Kinderkrankheiten*, 1856—a truly valuable work). The same author states, that he has seen some cases of congenital hydrocephalus cured under the use of this agent (*Lehrbuch*, p. 160). Notwithstanding such testimony, the treatment in question is not once referred to in any of the well-known and influential works on the practice of medicine, by Alison, Watson, Graves, West, and Bennett. Even in the very elaborate and masterly monograph on acute meningitis by Dr. C. E. Reeves (*Glasgow Medical Journal*, vol. vi. 1859), which gives the results of most extensive statistical inquiries regarding this disease and its treatment, no mention is made of iodide of potassium as a remedy.

When opportunities have been afforded of commencing the use of the iodide early, it has appeared in several cases to arrest the progress of the disease *rapidly*, so that the formidable effects of effusion, indicated by squinting and convulsions, have not supervened. In less favorable circumstances, in cases where considerable prostration had succeeded to great febrile action, and in which starting and squinting had become prominent symptoms, I have seen, in not a few instances, the free use of iodide of potassium, followed by amendment and complete recovery. In such cases, and in others still farther advanced, I have generally given larger doses, even to the extent of four grains, several times a day, to children of from four to eight years of age.

The medicine is very seldom refused by the patient, and I cannot say that I have ever seen it either increase the nausea that so frequently exists in the earlier stages of the disease, or produce any other untoward effect; especially have I never seen it induce salivation, which the drug sometimes seems to cause when given for other ailments.

It seems generally to act upon the kidneys; yet, I cannot say that the amount of relief to the head-symptoms bears any very obvious relation to the quantity of urine excreted.*

Although I have no doubt that the iodide is more especially useful in cases where there exists more or less of the scrofulous diathesis, I have often used it with satisfaction in patients apparently free from all such taint; even in cases where the ailment seemed to have followed injury from external violence, as so often happens in young children. I am not prepared, however, to assert that the iodide is more useful than calomel in *all* cases of inflammation of the brain and its appendages. When we have to treat robust and full-blooded children, in whom there is good reason to believe that the threatened disease of the nervous system stands more or less directly connected with preceding disorder of the digestive organs, I have no doubt of the superior efficacy of the mercurial treatment, combined with antimonials and salines; but when after having

* In a paper, "On the Diuretic Action of Iodide of Potassium." (*Arch. of Med.*, No. 3, London, (1858), Dr. Handfield Jones remarks, that "there are certainly remedies which exert very positive curative influence, admitting of no doubt or question, yet which afford no clue in their general mode of action to explain their special effects. Such, it appears to me, is iodide of potassium." Dr. Jones' observations, lead him to conclude that, under the use of iodide of potassium, the quantities of water, of phosphoric and sulphuric acids, and of chlorine in the urine, are very much increased; but the knowledge of this effect of the administration does not enable us satisfactorily to explain its *modus operandi*, either in the cure of secondary syphilis or in that of tubercular meningitis.

duly administered these, symptoms of cerebral disorder continue, I would have recourse to the use of the iodide.

In cases of convulsions from teething, which, amongst ill-fed children, living in badly-aired localities, are not unfrequently followed by hydrocephalus, I have used the medicine with much satisfaction.

I have occasionally employed the proto-ioduret of mercury, as advised by Evanson and Maunsell, but not with more obvious benefit than I have been accustomed to see resulting from the use of the iodide of potassium. During convalescence, I generally prescribe the iodide of iron; sometimes a vegetable tonic, combined with the iodide of potassium.

In several cases of recovery from severe attacks of meningitis, it has occurred to me to find the mental powers of the little patients considerably impaired. This result has occasionally been protracted for many years, and seems likely to prove permanent; but, generally, it has gradually become less apparent, and ultimately passed off entirely.

In thus endeavoring to recall attention to what I believe to be a truly valuable agent in the treatment of a class of formidable diseases, I would not overlook the fact, that all past experience tends to assure us that a great majority of cases of disease of the brain in early life prove fatal under all kinds of treatment. In advanced stages of the tubercular forms of these diseases, we may not yet venture to hope for any great advantage in the use of the iodide of potassium. But I am disposed to agree with Drs. Copland,* Willshire, and West, in believing that they may be cut short, if subjected to treatment in an early stage, more frequently than is generally imagined. My own experience leads me to regard the iodide as more likely than any other drug to promote this desired end; and my confidence in it, as *the* remedy best adapted to all stages of tubercular diseases of the head, is so strong, that whatever else might be done, or left undone, I would persevere in administering it, even in circumstances the most desperate. In almost all diseases of children, it appears to me right to continue treatment, even to the last. I am very fully satisfied that the use of the iodide never produces any bad effects,

* "If recognized early, a large proportion of cases will recover; even in the most advanced periods the patient should not be despaired of. I have repeatedly seen recoveries take place, although strabismus, paralysis, convulsions, blindness, unconscious evacuations, and other unfavorable circumstances, had existed some time.—(COPLAND, *Diet. of Pract. Med.*, i., p. 668.) "The prejudice which attributes the character of incurability to tubercular meningitis only serves the purpose of shackling the progress of medical art."—(ИАНН, *De la Meningite Tuberculeuse.*)

however frequently it may fail to do good.—*Edinburgh Medical Journal.*

[We can fully endorse the benefit of this remedy in tubercular meningitis, if there is any reliance to be based upon a diagnosis made most carefully. During the past year two cases happened to us in consulting practice, and in neither case was there a difference of opinion with any of the physicians concerning the nature of the disease. This modest but able paper of Dr. Coldstream has forestalled an account of the cases which we had drawn up for publication. But the views here expressed so completely anticipate our own, at the time the paper was written, that we are glad to find a more entertaining substitute by endorsing this.—EDITORS.]

2. *On Phosphatic Urinary Deposits in Over-worked Brain.*
By Dr. PARKES, Physician to University College, London.

"In all ordinary febrile diseases," says Dr. Parkes, in a clinical lecture recently delivered, "the curious fact has been made out, and now verified over and over again, that the chlorides disappear from the urine. Various arguments and explanations go to show that this absence or disappearance is an actual 'retention' of the chlorides; thus in typhoid fever, in one case, we had an entire absence of chlorides; so it is also often in rheumatism. The immediate pathological cause of this is still unknown. An absolute want of chlorides or chlorine is perceptible in a most marked manner in pneumonia. This diminution advances or commences early with the period of hepatization, and goes on for days; we always look upon it as a favorable symptom, as it is sure to be, when the chlorides make their appearance again in the urine in such cases; the chlorides, in fact, are increased as the urea is increased, and this is tantamount to saying—as the normal physiological changes in the body supersede the diseased changes or actions set up by the pneumonia, or capillary bronchitis, for it is the same as regards this phenomenon in both diseases.

"Now it is a curious fact, also, that there are two or three diseases of a rather striking character in themselves, and in these the chlorides are enormously increased. One of these diseases is ague; the chlorides increase during the cold fit, and go on to increase as well as the urea. The other disease is dropsy,

with great diuresis. Here 500 or 600 grains of chlorides a day (three times the normal amount) will be given off. The chlorides are all increased very much in the disease known under the name of *diabetes insipidus*. We have had frequent opportunities, and shall have again, to refer to these curious facts in some other of these clinical lectures.

“The next constituent of the urine that I wish to draw your attention to is the phosphoric acid, or phosphates, given off in disease and in health.

“Now, you will do well to remember that of the phosphoric acid contained in the urinary secretion, one-third to one-half, though no doubt it has some special function to perform in the system, is obtained directly from the food. If patients suffer from insufficient food, as amongst children badly nursed, or our Poor-law patients and dispensary patients, then the phosphoric acid in the urine is diminished or disappears nearly altogether. The phosphoric acid in the urine usually exists in combination as acid phosphate with potash, sometimes with soda, lime, and magnesia, but not with ammonia. You know already that there is a large amount of phosphate of magnesia in common bread, also in meat; but this, as well as phosphate of lime, requires acids in the stomach to dissolve it. You know, also, the old distinction of alkaline and earthy phosphates in the urine; the proportion of these are as five to one, and the total amount of phosphate for an adult may vary, so much as from a drachm and a half to five drachms, given off in the urine, but depending in a great measure on the quantity and character of the food.

“The phosphoric acid, on the opposite hand, formed in the system itself, comes directly from the disintegration of certain tissues in the body, such as the disintegration of nerve-tissues in particular; and this brings us to the consideration of a most important subject—the phosphoric acid formed in nervous or convulsive diseases from the exercise of the brain and nerves; and I may also add, from the disintegration also of muscular tissues. But before we come to that subject I may say a few words to make more clear what I mean by phosphatic deposits; and I may begin by saying that what one reads even yet in what are thought to be ‘standard books,’ as the phosphatic diathesis in patients, is altogether a mistake; there is no such thing as this diathesis. But if we place some urine, which is feebly acid, over the flame of a spirit-lamp, and boil it, a change takes place in some remote manner, like what is seen in what is called the phosphatic diathesis. The neutral phosphate of lime is divided into two parts—a basic phosphate is thrown down and an acid phosphate remains in solution.

The same occurs in the magnesia phosphatic salt; these basic compounds fall down, but on the urine standing, they partly re-dissolve again. It is said, as a theory to explain the change, carbonic acid is driven off by the boiling, or urea decomposed; but be this as it may, the fact of the decomposition is enough for us, in a clinical point of view: the subject is indeed of very great importance to men, especially in surgical practice, where this so-called phosphatic diathesis is often encountered from disease of prostate, or diseased mucous membrane of the bladder from stone. A deposit of mucus in the urine will lead to such deposit of phosphates, by the mucus decomposing urea. The prolonged exhibition of alkaline remedies may also induce a deposit of phosphates. It has been even said, and is practically held to be true by surgeons, that the mucous membrane of the bladder itself has the power of forming phosphatic deposits. The surgeon's finger in lithotomy will occasionally feel a coating of phosphates; but I don't know that this point has been sufficiently studied to decide whether this is a phosphatic deposit.

"Now, as to this often vexed question or hypothesis of prolonged action of brain or nerve-tissues being invariably followed by disintegration of nerve-cells and deposits of phosphates in the urine, though a very fashionable theory, I think the evidence is not at all decisive one way or the other. It is still a moot point on the confines of psychological science. You will perceive from what I have just stated that many circumstances, such as deranged health, excessive use of alkalies, prostatic disease after fifty years of age, &c., may lead to deposits of phosphates in the urine. Now, I need not say that prolonged mental work, or over-excitement of the brain, will lead to impaired health; the urine then becomes alkaline. I believe that after severe mental labor, such as that of reading up for University honors, a deposit of earthy phosphates in undue amount appears in the urine. I very much doubt, however, if it be solely from disintegration of nerve or brain-tissues, but from the constitution of the urine, as I pointed out a few minutes ago, being altered. In diseases where we have delirium, it is said also that we find excess of phosphoric acid in the urine. These physical or psychological reactions of the mind over the body are, no doubt, too much neglected at present; the question, in fact, may be said to be still *sub lite*, or 'not proven.' There is no doubt that emotions of various kinds react also on the nervous system. And it is strongly insisted that in chorea, which is very often the result of simple fright or emotion reacting on particular parts of the brain and nervous system, there you have large deposits of phosphoric acid in the urine.

If the fact be really a fact, as it is stated to be, it is one of the greatest interest.

"All I can say is, that a very reliable authority, Voegel, has examined the subject in over a thousand cases of this kind and of meningitis, with all the resources of the most accurate chemistry to furnish him with quantitative analyses of the phosphates in the urine, but at the end of his most laborious researches he is unwilling to commit himself one way or the other to any opinion on the subject! There is, no doubt, something in these finer mental actions, which, though they may produce death by 'shock,' or may produce such formidable symptoms as those of chorea, hysteria, epilepsy, &c., still may not be measured by the chemical balance. But at the same time I feel it right to tell you that both in America, in Germany, and France, the discovery of phosphate in the urine, after inflammation of the brain or nervous excitement engaging the brain-material, has been strongly insisted upon as an actual fact.

"In rickets, according to the excellent authority of Lehmann, the phosphates are decidedly increased in the urine, as also in tuberculosis; this latter fact agrees with the view now generally entertained that in the process of cell-formation the most essential inorganic element is phosphorus in some of its forms or combinations. It is said oxalic acid is sometimes found, and carries off the earthy phosphates in rickets, &c.; no doubt there is a coincidence of the two generally in the urine in such cases as I speak of, but still phosphate of lime is not soluble in oxalic acid. Phosphate of lime as well as phosphate of magnesia, as found in the urine, it is well to recollect, are in the condition of amorphous powders, while the ammoniaco-magnesia phosphate is in crystals. If you wish to be correct, I think it is as well you should take particular note of this, as some of the class books may mislead you.

"There are fallacies of 20 per cent. even in the best concerted plans of estimating the phosphates, so that we are as yet only at the threshold of the inquiry; but I would advise pupils to make themselves familiar with these 'Volumetric methods' of Liebig, which are very ingenious; and as regards the phosphates the 'Volumetric' plan is the best we have.

"There is no doubt that the phosphates are very much influenced by food and exercise, as already referred to; then, again, they are diminished in amount by such affections as diarrhœa, by which phosphates are passed off with half digested food, these phosphates having never entered the blood at all. The study of the phosphates is yet in its infancy, and how phosphoric acid acts in combination with iron and lime, or

in cod-liver oil, in building up nervous tissues in process of 'wear and tear,' or how it acts in such diseases as rickets, chorea, epilepsy, is altogether a very new and instructive subject of clinical research."—*Montreal Medical Journal*, May, 1859.

3. *Contagion of Pulmonary Phthisis.* By Doct. LAMARE. Translated for this journal from "L'Abeille Medicale," by SAMUEL C. CHEW, M. D., Baltimore.

French Physicians generally regard phthisis as a non-contagious malady; but it is well known that in many parts of Italy and Spain an opposite opinion is entertained. There are places in those countries where foreigners laboring under phthisis, who go thither with the view of benefiting their health, cannot obtain apartments without paying in advance a sum sufficient to defray the expense of renewing the furniture, and paper hangings of their chambers. Dr. Lamare cites his observations upon this subject, which are such as to give just ground for believing that under certain conditions phthisis may be contagious. A house of which he has had knowledge for twenty years, was occupied by a man, who shortly after removing to it, became affected with phthisis, and died. He was succeeded in it by another person—a man of very robust health—who kept all the furniture, even to the bed-curtains, which the former occupant had used. Some months afterwards he became phthisical and died in the same chamber, which, as far as was indicated by external appearances, was perfectly salubrious. A third occupant, who slept in the same room without renewing the furniture, had at the end of a few months all the symptoms of phthisis, to which he too fell a victim. As none of the inhabitants of the place were willing now to occupy the house, it was for a long time untenanted; and when at length it was again used as a dwelling, the precaution was taken of suffering nothing to remain in it, that had belonged to the former occupants. From that time no one had ever become affected with phthisis in this building.

Dr. Lamare reports finally some cases of persons previously in perfect health, who, after having lived a good while with phthisical patients, have presented symptoms of miasmatic poisoning. He concludes that though phthisis may not appear contagious under ordinary circumstances, it is capable of becoming so under certain special conditions; and that therefore intercourse between healthy and phthisical persons should not be carried further than is necessary to give the latter that care-

ful attention which their condition claims, and that consolation which they have a right to expect from those who surround them.

4. *On the Changes of the Urine in Disease.* By Dr. BRATTLER.

Dr. Brattler has made a series of very accurate investigations on the changes of the urine in typhus, morbilli, scarlatina, diseases of the heart, &c., and he has embodied the results in an elaborate treatise, entitled "*Beitrag zur Urologie im Kranken Zustande*;" München, 1858, *Joh. Palm's Hofbuch-handlung*.

The author gives the following summary of his urological observations:

Casting a retrospective glance upon our investigations and experiments, we find that the urine does not suffer in disease any changes peculiar to the different morbid conditions, but that these changes are in relation with definite processes going on in the organism. The urine of a case of typhus, pneumonia, cholera, or Bright's disease, may have one and the same qualities, for the very reason that certain processes, which modify the secretion of urine, may take place in any of these diseases.

The quantity of urine. It is *diminished*: In the commencement of nearly all febrile diseases; in diseases of the kidneys, when the uriniferous tubules are obstructed (*morbus Brightii*).

In diseases in which organism suffers great losses of serum, as excessive diarrhoea, cholera, copious perspiration.

In diseases of the circulatory and respiratory organs, in consequence of less blood being furnished to the aortic system, and therefore to the kidneys, as in disease of the heart, and in pleuritic exudation.

It is *augmented*: By the resorption of hydropic effusions and exudations.

In polydipsia, diabetes insipidus.

Urea. It is *diminished*: In the re-convalescence from all acute diseases, in which the organism has suffered a considerable loss of substance through fever, as in this case the nourishment carried into the system is used for the reparation of the lost nitrogenous tissues.

In the diseases of the digestive organs which hinder the resorption of the ingesta, as chronic vomiting in atrophy after typhus, and cancer of the stomach.

In diseases of the kidneys, interfering with their functions (*morbus Brightii*).

In diseases of the circulatory and respiratory organs, in consequence of less blood being furnished to the aortic system, and therefore to the kidneys.

It is *augmented*: In all diseases accompanied by fever, viz., by elevation of temperature. (The frequency of the pulse bears no constant relation to the secretion of urea.) The secretion of urea is the greater the higher the temperature rises.

An exception takes place only when in febrile diseases the functions of the kidneys is at the same time interfered with, be it by disease of these organs themselves, or secondarily by the influence of other organs.

In diseases in which the urea has been retained for a long time in the blood by functional disorder of the kidneys, after removal of the difficulty, as morbus Brightii, cholera, and disease of the heart.

By the resorption of hydropic effusions, as morbus Brightii, and dropsy from disease of the heart.

Chlorides. They are *diminished*:

In all diseases in which exudations or transudations take place, these effusions being rich in chlorides, as in typhus, pneumonia, pleuritis, Bright's disease, cholera, acute rheumatism, &c.

In diseases of the digestive organs which hinder the resorption of the ingesta.

In diseases of functional disorders of the kidneys with diminished urinary secretion, as in Bright's disease, and disease of the heart.

They are *augmented*: By the resorption of hydropic effusions.

Phosphoric acid. It is *diminished*:

In diseases or functional disorders of the kidneys with diminished urinary secretion, as in Bright's disease, and disease of the heart.

In diseases of the digestive organs which hinder the resorption of the ingesta.

It is *augmented*: In acute febrile diseases by the increased metamorphosis of tissues containing phosphorus.

The increase of phosphoric acid is, however, not as constant as that of urea. In diseases in which the phosphoric acid has been retained for a long time in the blood by functional disorder of the kidneys, after removal of the difficulty, as Bright's disease, and cholera.

According to *Bence Jones*, in acute nervous diseases, and in osteomalacia.—*Med. Cen. Zeitung.*

5. *On the Use of White Paint in some Cutaneous Maladies.*
By Mr. ALFRED FREER.

"I first became acquainted," says Mr. Freer, "with the great efficacy of white paint in the treatment of erysipelas by seeing it used by my late father and by my brother. It is, indeed, in this disease that the most striking benefit results from its application. I have never yet met with a case of this nature where it has not done immense good. I find it far superior to lead lotions, mucilage, hot fomentations, nitrate of silver, or collodion. After erysipelas, the paint proves of the greatest service perhaps in eczema in its several forms. In chronic eczematous eruptions of the aged it affords much comfort, and often speedily effects a cure. Of late years I have extended its employment to other complaints of the skin, including herpes in its several forms. I have tried it in some cases of smallpox, with the view of diminishing the number of vesicles on the face, and of controlling their size. The latter indication it seems likely to fulfill; but I cannot speak with confidence about the former, the papules being already numerous at the time of my visit. I have also used it in several cases of carbuncle and furuncle. The first was in an instance of a huge carbuncle, situated on the loin of a man, and rapidly extending, notwithstanding free incisions, linseed poultices, and appropriate constitutional treatment. I applied a thick, wide circle of paint round the swelling, and dressed with resin ointment and cotton wool. There was no advance of the disease from that time, the centre rapidly broke up, and recovery took place. It is, however, probable, that the omission of the warm poultice may have contributed to the improvement, for I have often observed that warm poultices, however well made, seem to foster and spread carbuncular inflammations.

"The paint seems to act in two ways: first, and chiefly, as an efficient excluder of the air—that great irritant to the cutaneous surface when disordered; and, secondly, as a direct sedative to the sentient nerve filaments, rendering them less prone to become involved in inflammatory action. In boils it relieves the painful tension, and favors resolution. In some forms of painful ulcers of the leg, of a small size, it gives great relief. In galling of the skin, where anasarca is present, it is also of use, and is the best application that we have in burns of the first and second degree. But it is in erysipelas that its triumph is most manifest; the patient soon finds the comfort of it; the tight shining skin soon becomes wrinkled and shrunken; indeed, the inflammation very rarely extends after the second or third painting.

"All my friends to whom I have recommended the pigmentum album speak highly of it; and one, who is a surgeon in the Peninsular and Oriental Company's service, has used it for the last two years with great success. The manner of applying it is by means of a feather, painting the affected parts and a little beyond, and laying on a fresh coat every two hours or so, until a thick layer is obtained, and then sufficiently often to maintain a covering. In erysipelas, it peels off in a week or so with the shed cuticle, leaving beneath a smooth, clean, healthy surface. Patients are struck with the benefit they derive from its employment."—*Lancet*.

6. *Medical Excerpts.*

Latest Methods of Treatment proposed in Phthisis.—Dr. Watson remarks, with great propriety, in his excellent lectures, that the more intractable the disease, the greater the number of remedies proposed. No one is surprised at the various modes of treating tuberculosis which have been extolled, for it is quite natural that new weapons should be sought against an enemy who proves invulnerable by the old ones. But we protest against unnecessarily teasing and tormenting the unfortunate individuals whose lungs are being destroyed by tuberculous deposit, and whose organism is wasting under the effect of the local mischief and the morbid diathesis. M. Beau, physician to the Paris Charité Hospital, for instance, proposes, and has practised, the following method: "Give carbonate of lead in phthisis, because painters hardly ever suffer from the disease; and substitute one cachexia for the other." Then we have a paper addressed by M. Aussandon to the Academy of Medicine of Paris, "On the Treatment of Pulmonary Consumption." The author, who has noticed that bakers, and generally those who sleep in the day and watch at night, bear the symptoms of the later stages of phthisis better than others, straightway advises to keep consumptive patients awake at night, and send them to bed in the day-time. He gives, however, into the bargain, warm baths in which Kermes mineral is dissolved; places issues in the axillæ, whilst the patient is under the influence of chloroform inhalations; and puts him into a warm bath before he wakes from the narcotism. M. Aussandon advocates also the use of syrup of tolu, cod-liver combined with syrup of bitter almonds, and a common drink made of sassafras, sarza, and corrosive sublimate!

On the treatment of certain abdominal inflammations by copious injections of warm water. By Dr. EISENMANN. Dr.

Eisenmann's plan is to inject about three or four quarts of water at blood heat. The first injection, he tells us, returns in a short time, and brings with it a considerable quantity of faecal matter. The second injection, which is to be given immediately after the return of the first, is almost invariably retained without difficulty.

Dr. Eisenmann believes that by this plan he has cut short, often in a very few hours, a dozen attacks of peri-hepatitis, to which he himself is very liable; and he mentions cases of nephritis, peritonitis, abdominal typhus, violent palpitation, &c., in which he has seen a similar rapid change for the better in others. He believes also that these injections will prove of great value in the treatment of cholera. Dr. Eisenmann does not appear to be aware of the satisfactory results obtained by Mr. Haro from copious injections of warm water in the treatment of dysentery in India.—*Bull. de Thérap. and Gaz. Heb.*

Bromide of Potassium.—The Fellows of the Medico-Chirurgical Society of London will recollect the alleged uses of bromide of potassium, as pointed out by their late President in reference to certain affections of the nervous system. Dr. Pfeiffer, of Paris, has lately experimented with the compound on the male sex. M. Thielman, in 1854, obtained good results, as he asserts, from its use in painful erections, satyriasis, and spermatorrhæa; and his results are now confirmed by Dr. Pfeiffer. He finds that it exercises a happy influence over seminal losses, abnormal erections, and neuralgia of the neck of the bladder. It has a special power over the muscular part of the genito-urinary apparatus, and at the same time causes a marked amelioration in the secreting action of the same organs. In large doses it appears to produce symptoms like those caused by iodide of potassium.

An Aristocratic Recipe for the Itch.—M. Bourguignon, its inventor, states that the ointment has a pleasant odor, and effects a certain cure after a single friction: Yolk of eggs, 2; essences of lavender, citron and mint, of each, 5 grammes; essences of canella and clove, of each 8 grammes; gum-dragon, 2 grammes; sulphur, well pounded, 100 grammes; glycerine, 200. Mix well the essences with the yolks, add the gum-dragon; then to the mucilage add very gradually the glycerine and sulphur.

SURGICAL PATHOLOGY AND OPERATIONS.

1. *Extraction of a Bar of Lead from the Stomach.* By JOHN BELL, of Wapello, Iowa.

One of the most extraordinary operations in the annals of surgery has been performed recently in the extreme West, and deserves to be recorded on account of its boldness, successful result, and for the judicious method of procedure adopted by the surgeon. We find the case reported in full in the Boston Medical and Surgical Journal.

A man named Bates, on Christmas day, in Wapello, Iowa, performing some tricks with a bar of lead, *accidentally swallowed it*. He went at once to Dr. Bell of that place, but being tipsy his story was not believed, and for *four days* he continued at his work, until the violent vomiting, abdominal soreness and loss of strength, compelled him to desist. The physician, finding that it was, indeed, true that he had swallowed the bar of metal, determined upon the operation of Gastrotomy, which is described as follows by Dr. Bell:

Operation.—Wednesday, Jan. 3d. Present, Drs. Robertson, Cleaves, Graham, Taylor, and myself. The patient seemed much as on the previous evening. He had great prostration and faintness on attempting to rise. The patient having been properly placed and secured, chloroform was administered. It produced, at first, some nausea, and he threw up a quantity of black, foetid, watery fluid. As soon as insensibility ensued, I made an incision from the point of the second false rib to the umbilicus, dividing the skin and cellular membrane; thence through the abdominal muscles to the peritoneum, which I laid bare the whole length of the incision. I then made a minute opening at the lower end of the section, through the peritoneum, passed in the director, and with a probe-pointed bistoury divided it through the entire length of the incision. The division of the peritoneum produced a spasmodic contraction of the muscles of the abdomen, and a large quantity of the omentum and bowels was ejected from the orifice. Increasing the chloroform controlled the spasm, and I replaced the bowels as speedily as possible, and passed my hand inward and upward through the incision, grasped the stomach, and immediately *discovered the bar of lead* and its position. It lay in a direction from right to left, the upper end resting against the walls of the stomach to the right of the cardiac orifice;

the lower end in the greater curvature of the stomach, to the left of and below the pylorus. As it was impracticable to reach the upper end, I seized the bar between my thumb and middle finger, and with the forefinger on the lower end of it, I retraced it upward and backward, for the purpose of making the incision in the stomach as high up as possible. I then passed a scalpel in, along the side of the forefinger as a director, and divided the coats of the stomach immediately at the end of the bar, making the incision parallel with the muscular fibres, and not larger than to admit of the removal of the lead. I then introduced a pair of long forceps, seized and drew out the lead, and placed the stomach in its natural position. The external orifice was closed with the ordinary interrupted suture and adhesive straps, a compress applied, and a roller around the body.

The time occupied in operating was twenty minutes. Considerable delay was occasioned by the protrusion of the contents of the abdomen, which had to be replaced before the operation could proceed. As soon as the effects of the chloroform passed off, a quarter of a grain of sulphate of morphia was administered, and the patient left in charge of a judicious medical attendant."

The after treatment of this case was simple, the patient was kept quiet—permitted to eat but little, and the operator had the pleasure of seeing him walking about on the 14th day convalescent.

The length of the bar was $10\frac{3}{4}$ inches and its weight $9\frac{1}{2}$ ounces.

2. *Termination of the Debate in the Academy of Medicine at Paris, on the Introduction of a Tube into the Larynx in cases of Croup.* Translated, for this Journal, from "L'Abeille Medicale," by S. C. CHEW, M. D., Baltimore.

The President announced that, as the list of speakers was exhausted, he would read the resolutions,—the first of which is as follows: "The Introduction of a Tube into the Larynx, as proposed in the treatment of Croup, is a means at once difficult of execution, always inadequate in its results, and often dangerous."

M. Malgaigne.—I would remind the President that I have offered other resolutions, namely, to thank M. Bouchut for his communications, and to invite him to make known to the Society the results of his latest researches with regard to this operation.

M. Trousseau.—I am opposed to these resolutions. M. Bouchut, I regret to say, has been wanting in that respect which is due to the Academy. The committee appointed for the purpose, desiring to know the results of M. Bouchut's experiments, requested him twice to communicate them. M. Bouchut has not deigned to reply to our requests. I think, therefore, that our *confrère* does not deserve the thanks of the Academy. But, for this, I should have been the first to support the proposition of M. Malgaigne. As it is, however, I shall oppose it as far as I am able.

M. Velpeau.—I understand the embarrassment of the Academy with regard to this question. The statements made here are certainly not encouraging: nevertheless, the measure is new, and has as yet been little tried. All are agreed that it may be employed within the first forty-eight hours without the occurrence of accidents. It requires further investigation, and if it does not deserve our approbation, it is as little deserving of censure.

M. Trousseau.—Our resolutions contain not a word of censure; they point out the dangers of the practice, and that is all. Are we not justified in considering the operation dangerous after the experiments we have tried at Alfort, and the deplorable results of those experiments?

M. Velpeau.—I would willingly offer an amendment, that should make the first resolution read as follows: "We think that, as it has been employed up to the present time, the introduction of a tube into the larynx is neither sufficiently efficacious, nor sufficiently free from danger, to deserve the encouragement of the Academy."

M. Malgaigne.—I am not opposed to this resolution, provided the words "without prejudicing the operation in view of the future," be added.

M. Trousseau.—This is superfluous; besides, it is imprudent for the Academy to pledge itself to any future action in the matter.

M. Larrey.—Gentlemen, I think, we should be cautious with reference to the future. The history of surgery shows how necessary this is. Have you forgotten what repugnance the operation of tracheotomy in croup at first met with? Was it not universally reprobated? And yet to-day you extol its excellence. What assurance have we that the operation, at present under consideration, has not the same fortune reserved for it? For these reasons I support the amendment of M. Velpeau.

M. Gibert.—Why prolong the debate? Why not content ourselves with a resolution which does not compromise us for

the present, nor involve us in any future responsibility, which expresses such facts as have been observed—such results of experiments as are known?

The President then read the resolution as amended by M. Velpeau.

Several voices.—In place of “encouragement,” substitute the word “approbation.”

The resolution was put to the vote and adopted.

The second resolution was also adopted without discussion; it was as follows: “In the present state of the science, tracheotomy is the only means to be employed in croup, when medical agents afford no further chance of saving life.”

8. *Treatment of Bruises, Wounds and Suppurating Sores.* By MITCHELL HENRY, F. R. C. S.

Bruises are of various degrees of intensity, sometimes being very trifling in amount, and sometimes reaching to the almost complete disintegration of the tissues; and, if at all serious, are invariably accompanied by the effusion of blood from the broken capillaries underneath the skin. The great extent of these effusions of blood—extending as they do sometimes for a space of a foot or more around the seat of injury, the feeling of a soreness which they produce, and the changes of color which the absorption of the blood gives rise to—are familiar to us all. We all know, too, that condition of general shaking, from a fall or the like, which causes people to complain of “being bruised all over.” In fact, bruises in some shape or way are the commonest of all injuries, and those for which surgical aid is most frequently required. It is gratifying, therefore, to know that in the common arnica plant, and in the tincture prepared from it, we have a remedy of very singular efficacy, applicable in all cases, from the most trifling to the most severe. I have employed it for several years past in a vast variety of cases, and can speak of it from experience as unapproached in power by any other remedy or combination of remedies whatever. Many persons suppose that we are indebted to the homœopaths for the introduction of arnica; but this is quite a mistake, although it has been more prominently brought into notice by their commendations. Arnica has long been in use as a popular remedy in this country. In Ireland, a poultice of arnica leaves (the leopard’s bane) is a favorite application to the “broken knees” of a horse, and is a far more rational one than the stimulating “oils” so commonly used in England. To bruises, to allay the smarting of wounds

after operation, to fractures, dislocations and all similar injuries, it may be applied with implicit confidence in its power, to the exclusion of fomentations, cooling lotions and leeches. The only objection that can be made to it is, that it sometimes irritates the skin; but this proceeds from its being employed in too great quantity and strength; or it is possible there may be a peculiar idiosyncrasy which predisposes the skins of some persons to become irritated by it. I can only say, however, that such cases may be rare indeed, for I have never met with one. I never employ it weaker than two drachms of the tincture to the pint of water, or stronger than two drachms to the ounce of water, and this is only in rare cases, and for a short time, until pain has abated. The most useful strength is four or six drachms to the pint, and this may be kept as an hospital preparation, and used indiscriminately. In cases of very severe shock, as in heavy falls, a few doses of the tincture in quantities of five minims, administered internally at intervals of four or six hours, and carefully watched, for it is a depressant, will give great relief.

Wounds.—As regards the treatment of recent wounds, whether connected with fractures or not, it is also necessary to be on your guard, lest meddlesome surgery, like meddlesome midwifery, prove injurious to your patient. When hæmorrhage has ceased, and the part has been perfectly but gently cleansed, all torn and displaced textures should be carefully brought together, taking care that no stretching of the integuments is permitted. In many cases, where there is a disposition to sanguineous oozing, a bit of dry lint forms the best and readiest application. The albumen of the blood coagulates and hermetically seals the wound; whilst, at the same time, it is by no means prone to decomposition, so that it will dry and adhere for many days without becoming offensive. The case is quite different with clots of blood, which are notoriously apt to putrefy when exposed to the air. Strapping and adhesive materials, except sometimes as tending to support and consolidate the sound textures, should be avoided—metallic sutures, either of well annealed iron wire or of silver wire, being substituted for them. Metallic sutures excite no irritation, and may fearlessly be employed in every situation and to all textures. Unlike sutures made of vegetable materials, the holes through which they pass undergo no suppuration or ulceration, and they may be left in *situ* for an indefinite period—for three weeks if it be desired; indeed, it is not an uncommon event for us to lose a wire suture altogether, the patient leaving the hospital with it still in his body. The arnica lotion should be

applied over the wounded part, which, when practicable, should be kept elevated high above the patient's body; and the relief that these two measures afford will surprise persons who are not familiar with them. The only exception to the propriety of elevating the limb is in cases in which there is much loss of temperature from defective circulation, or a fear of sloughing from the severity of the injury. To limbs in this condition, thick layers of cotton wool form the most advisable application; but, in my opinion, no worse practice can be adopted than that which is too common—namely, the placing of the injured part in a hot poultice that it may “recover itself.” The results of careful adjustment, and of attempts to save textures and parts, almost against hope, will amply re-pay the surgeon, who, at the same time, places his reliance in opium and wine as constitutional treatment. I may here mention that when re-action and inflammatory fever set in, the tincture of aconite, when carefully watched, will exhibit surprising power over all forms of vascular excitement.

Suppurating Sores and Wounds.—Your minds cannot be too strongly impressed with the truth, that suppuration is a great evil, and may become a peril to your patient. All applications that promote it are, therefore, to be avoided—such as hot fomentations of all kinds, poultices and ointments. Torn and disorganized parts will suppurate in spite of all we can do. Our efforts must then be directed to rendering the process as little inconvenient as possible. The most scrupulous attention must be paid to supporting the suppurating textures by means of splints, strapping the sound parts of the limb, and applying graduated pressure, so as to limit the area of suppuration, and prevent the matter from burrowing. Next, the pus itself must be rendered as innocuous as possible by attention to cleanliness and by disinfection, when, as is most commonly the case, this also is required. Long ago, impressed with the fact that erysipelas, diarrhœa, phlebitis and low fever could often be traced to the foul condition of suppurating sores on the patient's own body, I have tried almost every disinfectant that has come before me, including of late the mixture of plaster of Paris and coal tar, now so much eulogized in France. One objection to it and to several others—as, for instance, charcoal, one of the best of all—is that they are unseemly, or smell disagreeably. No such objection, however, applies to a solution of Condyl's fluid (the permanganate of potash), which, for two years past, I have largely and most beneficially employed in the case of all varieties of suppurating sores. A solution of from half a drachm to two or four drachms of the purple fluid to the pint

of water, will keep even the most offensive sore sweet and clean, and, as a general rule, produce no pain whatever. If it does, the solution must be made weaker, until the required strength is attained, for there is a great difference in respect to its tolerance amongst patients. Its benefits are, perhaps, more strikingly displayed in the case of burns than in any other form of suppurating sores. From the day that suppuration commences in the case of a burn or scald, under my care, it is dressed with lint saturated with a weak solution of this fluid, commencing with half a drachm to the pint of water, over which a layer of cotton wool is applied. I have no hesitation in saying that burns thus treated will get well better than under any other system that I am acquainted with. The smell, always one of the most distressing features in these cases, is very greatly lessened, if not altogether destroyed; and the patient, no longer tormented with a horrible odor constantly under his nose, regains his appetite for food, whilst he is spared the chances of constitutional affections from absorption of putrid matters.—*Lancet*.

4. *Amputation of the Thigh in the Hypnotic State.*

Mr. Guerinau, surgeon to the hospital of Poitiers, in France has just published, in the *Gazette des Hopitaux*, the case of a farm laborer, of thirty-four years of age, who has had his thigh amputated for white swelling in the knee-joint, whilst under the influence of hypnotism. The patient had been ill two years, and experienced such pain in the knee that it could not be touched without exciting cries of distress. So apprehensive was he of pain, that he would not be carried to the operating theatre, but hobbled on crutches until he fainted. This was a case evidently unfit for chloroform, so that hypnotism was tried. A bright spatula was held about four inches from the root of the nose, the patient being recumbent. Strabismus immediately occurred; but when attempts were made to separate his legs, he resisted, and said it hurt him. Five minutes after the beginning of the experiment, one arm of the patient was raised by the surgeon, but it fell down; hence it was plain that catalepsy was not being produced, and the man then observed that it would be difficult to put him to sleep in that manner. Great silence was then enjoined in the room; and, after five minutes, the patient being still fixed by looking at the spatula, the flap amputation was performed. It lasted one minute and a half, and, to the surprise of all present, not a sign of pain was evinced by the patient, and he made not the

slightest movement, though hardly held by the assistants. When asked how he felt, he said he thought he was in Paradise. His eyes remained open the whole time, were somewhat oscillating, and affected with strabismus. About two minutes before the beginning of the operation, a pupil pinched the patient's thigh, asking him whether he felt pain, upon which he answered, "Yes, I feel a little." After the operation, the patient said: "I felt what was done, for, at the time the limb was being amputated, you said to me, 'Do you feel any pain?'" Now it should be noticed that the limb was removed two full minutes *after* this circumstance occurred, so that the man could not have felt any pain at the time of the actual operation. It is, however, not stated how he bore the tying of the arteries and the dressing of the stump.

5. Immediate Cure for In-growing Nail.

Dr. N. GILMAN recommends (*Bos. Med. and Surg. Journ.*, Dec. 29, 1859) cauterizing the part with hot tallow as a speedy mode of curing this troublesome affection.

"The patient," he says, "on whom he first tried this plan was a young lady who had been unable to put on a shoe for several months, and decidedly the worst case that I have ever seen. The disease had been of long standing. The edge of the nail was deeply undermined, the granulations formed a high ridge, partly covered with skin, and pus constantly oozed from the root of the nail. The whole toe was swollen and extremely tender and painful. My mode of proceeding was this: I put a very small piece of tallow in a spoon, and heated it over a lamp till it became very hot, and dropped two or three drops between the nail and the granulations. The effect was almost magical. Pain and tenderness were at once relieved, and in a few days the granulations were all gone, the diseased parts dry and destitute of feeling, and the edge of the nail exposed so as to admit of being pared away without any inconvenience. The cure was complete, and the trouble never returned.

"I have tried this plan repeatedly since, with the same satisfactory results. The operation causes but little if any pain, if the tallow is properly heated. A repetition might in some cases be necessary, although I have never met with a case that did not yield to one application. The liquid cautery insinuates itself into every interstice, under the nail, along the fistula into the ulcer at the matrix of the nail, accomplishing in one minute, without pain, all that can be effected by the painful application

of the nitrate of silver for several weeks. Let this simple plan be tried before resorting to the barbarous plan of pulling out the nail or any other mode of torture heretofore invented.

6. *Is Favus a Strumous Disease?—Opinions of Writers.*

"*Tinerea favosa* (favus) is said to occur chiefly in the scrofulous, those mentally weak, and those in bad health; Jacobs was certainly neither scrofulous nor mentally weak, and his health was excellent."—*Dr. Jenner's Clinical Lecture* (1853).

" . . . One, the essential nature of which consists in the deposition of that heterologous formation called tubercle."—*Mr. Erichsen* (1842.)

"It will be sufficient for me to show you in one group the favus patients who are now in our wards, in order to convince you that, with the exception of a few scrofulous children, the subjects of this disease are all of a robust constitution."—*Bazin, "Des Teignes,"* p. 82 (1858).

"Defective nutrition is the real cause of the disease."—*Mr. Erasmus Wilson* (1847).

"To favor its propagation poverty and sickness must have reduced the living body to a state fit to constitute the nidus for a parasitic plant."—*Dr. Corrigan* (1845).

DEGREE OF FREQUENCY OF FAVUS.

"It is a very rare disease in Ireland, according to my experience."—*Dr. Corrigan* (1845).

"In the course of my long connexion with the St. Pancras Infirmary, I have seen not more than six cases of favus."—*Mr. Erasmus Wilson* (1847).

"Favus is, next to eczema and impetigo, the most common of the chronic diseases of the scalp. The complaint is very common in England."—*Rayer*.

"*Tinrea favoso* (favus) is fortunately rather a rare disease in England."—*Dr. Jenner* (1857).

IS FAVUS CONTAGIOUS?

"The contagiousness of favus is an established fact."—*Gibert*.

"Favus is a contagious disease, and is readily communicated among children who make use of the same comb and brush."—*Rayer*.

"*Essentialement contagieux.*"—*Cazenave*.

"I believe it is not contagious."—*Dr. Corrigan* (1845.)

"It spreads rapidly by infection through families of children."—*Mr. Samuel Plumbe* (1821).

"My own careful investigations have forced on my mind the conclusion that favus is not contagious.—*Mr. Erasmus Wilson* (1847).

"Favus is the only true and real contagious disease of the scalp. . . . There cannot be the least doubt that it is very frequently, and very readily communicated by contact."—*Mr. Erichsen* (1842,) "On diseases of the Scalp."

"Favus is evidently contagious, but in some cases the attempt to produce infection has entirely failed."—*Bielt*.

7. *Successful Operation for Imperforate Anus.* By Professor THIRY.

The author was called to a strong male child twenty-four hours after its birth. Not the slightest trace of an anal aperture could be perceived, and the case had begun to assume a very serious aspect. By a happy chance, while the child was being turned round, a greenish matter, which proved to be meconium, was seen to issue from the urethra, indicating doubtless that the rectum terminated in the posterior wall of the bladder. A small catheter was at once introduced into the bladder, and by slight pressure engaged within the rectum, as was proved by the discharged meconium at its other extremity. The catheter was now raised gently towards the walls of the abdomen, so as to induce a projection towards the perineal region. This was not sufficient to reach the skin, from which the catheter continued separated by full a centimetre and a-half; and it was not deemed right to increase the depression lest laceration might be induced. A linear incision full two centimetres long, was now made at the proper point for the anal orifice; and after carefully dissecting away the tissues to a centimetre and a-half in depth, the catheter was reached. The intestine was divided to the same extent as the skin, and meconium mixed with blood flowed out, no hæmorrhage having occurred during the operation. The catheter was next turned so as to bring its concavity towards the wound, and its extremity was carried right through the incision to the exterior. To this a large tent of charpie, well greased, was attached, which, on the withdrawal of the catheter, occupied the whole track of the wound to the wound of the intestine, the thread attaching it being brought out through the bladder and urethra. In this way, the wound could be dressed when desired, the flow of matters was favored, and infiltration was prevented.

8. *Sciatica and the Actual Caution.*

M. Valleix and M. Jobert have done wonders in the cure of sciatica by the actual cautery, and now again M. Monneret, of the Hôpital Necker, comes forward as its great admirer. Of thirteen cases he makes a cure of ten. Some of these were cured after one, some after two, others after several cauterizations. The application of the cautery requires a skilled hand. It should be lightly used, so as only to brown the surface of the skin with lines drawn upon it; it is to be done with a hatchet-shaped cautery at a white heat. This is run rapidly over the seat of pain, and according to the extent and age of the complaint is to be measured the length of the lines. M. Monneret almost always practises three or four lines extending from the hip to the outside of the popliteal space. If the leg is painful, he goes from head of fibula to external ankle. In the foot he is contented with two or three lines.

BIBLIOGRAPHICAL RECORD.

I. *An Introduction to Practical Pharmacy*, by EDWARD PARRISH. Second Edition. Philadelphia, 1859: Blanchard & Lea.

As stated on the title page, this second edition is greatly enlarged and improved. There are nearly two hundred additional pages, and throughout the volume much entirely new matter of great value is found, and it may now be commended "as a text-book for the student and as a guide for the physician and pharmacist." The Faculty of Medicine at Harvard University have acted wisely in placing Mr. Parrish's work among their text-books, and we wish it were placed in the hands of all students of medicine. We would not then have such sad deficiencies as are now frequently met with, in

regard to practical pharmacy. The Professor of *Materia Medica* has barely time in the few months of the session to go over accurately the articles in common use, and if he wishes to instruct his class as to their application to disease or therapeutics, it is simply impossible for him to touch upon pharmacy. When we reflect, moreover, that by far the larger number of the graduating classes retire to the country districts, where they have to act as their own apothecaries, we cannot overestimate the importance of their carrying with them so complete a work on this branch as that before us. It will be worth more to them than all the works simply on medical formulæ that have ever been published. It teaches principles of combination and prescribing, and not merely prescriptions. The medical practitioner will find it a very useful volume in his library, to be placed between his Wood and Bache and his Pareira as a book of constant reference. To the pharmacist it is invaluable, and should be in such habitual use as to be kept on his table. In this connection may we not add our satisfaction at seeing schools of pharmacy starting up in the different cities. Already we have them in successful operation in Philadelphia, Baltimore, New York and Chicago. Their regular system of lectures and discipline is doing much to raise the standard of education among apothecaries, who are so closely connected with our profession as important aids and co-workers, that we cannot but take a deep interest in whatever increases their opportunities of acquiring a thorough knowledge of their business.

Our author calls the attention of the profession to the extraordinary solvent power of glycerin and the consequent advantage of resorting to it as a menstruum for the administration of other remedial agents. The fact that it is the sweet principle of fat, and is not liable to become rancid, makes it a useful vehicle in which to give many remedies. It may be well to add, "that its solvent power is between that of water and of alcohol, and generally substances may be said to be more soluble in glycerin, the more they are so in alcohol; and that a high temperature greatly increases its solvent power.

Among the more important chemical substances freely soluble in glycerin we have, iodine, iodides of potassium, iron and sulphur, sulphurets of potassium and calcium, biniodide of mercury, corrosive sublimate, sulphate of quinia, tannic acid, salts of morphia, veratria, brucia, atropia, tartar emetic, &c." Glyceroles are coming daily more into use among us.

In speaking of the unofficinal solutions of opium, our author states that it is generally understood that McMunn's Elixir, which though bordering on the confines of quackery is much used by regular practitioners, is nothing more than a simple aqueous solution with sufficient alcohol to preserve it. If this be true, it is very singular that no one has yet made an aqueous solution of opium which could be used as a substitute for it. Although its use by us is of questionable propriety, there can be no doubt of its value, as in many cases of disease it is superior to the ordinary preparations. Professor David Stewart believes that it is a mild tincture of opium deprived of its codeine. He accordingly made such a tincture, which resembled very much in its effects the McMunn's Elixir.

We refer our readers to the volume itself for much valuable information not accessible elsewhere. Among the tests for grape sugar we are glad to find Mr. Parrish has placed that of Prof. Boettger's. Believing that the profession generally are not fully aware of the accuracy and delicacy of this test, as applicable to diabetic urine, we beg to quote a more detailed account of it from the *Maryland Journal of Pharmacy* as it was translated from the original article :

"It is a well known fact that the examination of urine and other secretions as to their contents of sugar, has been connected, up to the present time, with various difficulties for the physician, as it has required always a certain amount of skillfulness in experimenting to detect surely, and prove with certainty, either by the way of Range's or Trommer's test, a small quantity of sugar in such secretions. As moreover, according to my observations, free uric acid acts as a reducing agent on the hydrate of copper in Trommer's test, it may very easily happen that the physician remains in doubt, whether he

has urine with or without sugar. Whereas my new mode of proceeding offers to every one, so sure a re-agent, and which is so easily effected, that I flatter myself every physician will make use of it in future. He will now be able to perform the examination without delay at the bedside of the patient, so certain, so easy, and with proportionally so small a quantity of urine (one tablespoonful in most cases being sufficient) that he will resign all other methods heretofore used with pleasure. This new re-agent is subnitrate of bismuth, together with carbonate of soda. In examining a urine for sugar, pour it into a test tube, add an equal volume of a solution of carbonate of soda, (1 part carb. of soda, and 3 parts of water,) and about 2 or three grains subnitrate of bismuth, and heat to boiling. If this snow white salt of bismuth, after boiling, shows the least blackish or grayish color, it proves most positively the presence of sugar, as I found, with the exception of grape sugar, none of the other ingredients of urine whether organic or inorganic, possess the property of deoxydizing this salt to the suboxyde or to the metallic state. As furthermore pure cane sugar effects no similar re-action, we have by this re agent an excellent means of detecting any traces of grape sugar in cane sugar. M. Grishow having used this re-agent, found the precipitate of bismuth to become of a darker (brownish grey) color in urine free from sugar, but containing much albumen. Boettger replies to this, that his test nevertheless loses neither its certainty nor usefulness, as urine containing albumen needs only to be boiled for a few minutes, and after the coagulated albumen has been removed by filtration the re-agent may be applied."

II. *On the Coagulation of the Blood in the Venous system during Life.* By GEORGE MURRAY HUMPHREY, M. D., F. R. S., Lecturer on Anatomy in the Cambridge University Medical School. (Received from the author.)

The original and interesting researches of Dr. Richardson, on the causes of the coagulation of the blood, have attracted

the attention of many observers to a phenomenon which has been daily witnessed, without having ever been explained in so plausible a way as by the ingenious author of the Astley Cooper Prize Essay.

If blood depends upon the presence of ammonia for its fluidity, and owes its tendency to form a clot when withdrawn from the body to the loss of this chemical agent, we may not unnaturally expect the same coagulation to happen in the living tissues when a deficiency of ammonia occurs, from any cause, whether of defective nutrition or the progress of disease.

The author of the neat little monograph before us has devoted his attention to the investigation of the causes which produce coagulation of the *venous blood* in the system during life, and his paper, whilst it presents nothing definite on the subject, is at least suggestive and worthy of a passing notice.

Dr. Humphrey observes, in the first place, the tendency to formation of clot in the general venous system, as in the saphena major, femoral and popliteal veins, and gives some well marked cases, taken from his own observation, where the existence of these clots were proved by post-mortem examination.

These cases invariably appeared in persons who were in declining health, sinking under the pressure of chronic disease, as phthisis, chronic bronchitis or general anemia. It is not difficult, in such instances, to understand that the blood vessels, especially of the lower extremity, should be unable to *lift* the column of blood from valve to valve along the great venous trunks. Blood, probably augmented in quantity, and certainly with a marked increase of fibrine, tending to the formation of clot, particularly at the *junction* of these main trunks, would naturally deposit its excess of fibrine at such points in its course, and it is interesting to observe that this happens most frequently in the superficial veins, proving the correctness of the theory that the action of the superincumbent muscle aids the blood column in its ascent towards the heart.

This passive coagulation should not be confounded with that degree of inflammatory excitement, the consequence of purulent absorption, known as phlebitis, but rather should be classed

with the phlegmasia dolens of the parturient woman. Sometimes, it is true, that inflammatory symptoms appear, but they are moderate, easily checked, and rarely produce serious results.

Our author proceeds to examine this spontaneous coagulation of venous blood when it takes place at other and more dangerous points, as in the pulmonary arteries, when death follows from obstruction simply; in the cerebral sinuses, causing death by pressure, or in the cavities of the heart, when the impeded circulation inevitably tends to a sudden and fatal termination. Unless the coagulation takes place at some of these necessarily fatal points, the author does not regard their occurrence as dangerous, and sums up his conclusions as follows:

1. The great veins are very liable to become obstructed by clots forming in them when the patient is greatly debilitated, and when the circulation is enfeebled—by inflammatory affections, by discharging abscesses, difficult labors, and other causes.

2. The clots result from an altered state of the blood, disposing the fibrine to solidify; and are found in those parts of the veins which offer the greatest facilities for its so doing.

3. The inflammation of the veins is a consequence of the presence of the clot, and is chiefly confined to their outer coats, and to the surrounding cellular tissue.

4. The clots may soften and become intimately connected with the walls of the vessels, and may lead to the complete and permanent obliteration of their canals: more commonly, however, they are removed, or shrink into delicate bands or fibres, which offer little or no obstruction to the circulation.

5. The affection rarely leads to any serious result. It may be associated with so-called pyæmia; but has no necessary or frequent connection with it.

What seems to us to be the great difficulty in such researches as these, is how to distinguish between clots formed before death, and those naturally appearing *after* death. It is true that Dr. Richardson, to whose valuable work we have already alluded, gives us as the two leading characteristics of the *ante mortem* clot, its lamellated structure, and especially when a *tubular* formation can be discovered containing red blood in its interior, but it is hardly possible to understand why the fibrinous deposit *after* death should not assume the same aspect, and we doubt the possibility of distinguishing between them.

III. *A Geological Visit to the Virginia Copper Region.* By RICHARD O. CURRY, A. M., M. D., late Professor of Chemistry, Shelby Medical College, Nashville, &c. (Received from the author.)

Vast, indeed, is the amount of undeveloped wealth to be found within the borders of the State of Virginia—exhaustless almost are her mines of coal and iron, the two great levers of modern days. Plentiful *traces* of gold are scattered over her domain. Salt in profusion on her western boundary, and, as this useful little pamphlet proves, considerable deposits of copper ore can be discovered throughout her south-west districts, running through the counties of Floyd, Carroll and Grayson, and passing over into the neighboring counties of North Carolina, Ashe and Alleghany.

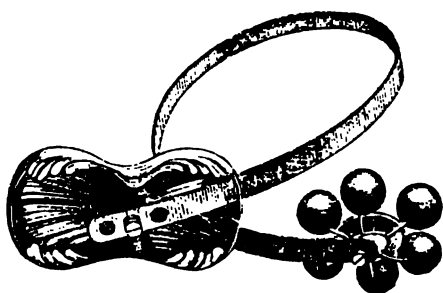
Dr. Curry, formerly the Professor of Geology in the East Tennessee University, has recently visited this copper district, and sums up, in the tract before us, the results of his observations; and we are enabled to conclude with certainty from his data, that, when properly developed, this region of the State may be made to produce this useful metal in considerable quantity.

Dr. Curry visited the principal *leads*, which have been as yet only partially opened, and finds every where abundant evidence of the value of the ore, which only requires judicious management, and a *road to market*, to become exceedingly valuable.

The ores of copper in this region are found in great abundance—the sulphurets, carbonates and oxides, at some points, yielding from 15 to 30 per cent. of metal. We are satisfied, from the statements made by Dr. Curry, that a scientific and judicious system of mining, especially when a way to market by Wytheville and Christiansburg is opened, would afford large profits, and we would gladly see the Legislature, at its present session, afford some aid to this beautiful section of the Old Dominion.

EDITORIAL AND MISCELLANEOUS.

THE RIGGS TRUSS.



There is no surgical affection attracting so much notice at this time, both in Europe and this country, as hernia in all its varieties; a misfortune so frequent that it is supposed to include *one-tenth* of the human race, and yet so difficult to remedy that, with all the efforts of the art, we have only succeeded in palliating, and rarely attempt, or even hope for, a cure of this sad calamity.

Our readers have repeatedly observed in the pages of this journal, the ingenious efforts of the profession to effect a radical cure of hernia, and yet it must be said that, while we have overcome difficulties apparently much more formidable, we have not achieved this great victory. *The injection of the hernial sac*, with the hope of producing adherence and closure of the adhesion ring, has failed. The use of compression with hard bodies to effect the same object, as by the use of the stiff and unyielding wood truss, rarely succeeds. And the last and most hopeful suggestion, originating with Gerdy and modified by Rothmund, Wutzer, and others, the method of obliteration by *invaginating the inguinal canal*, is rapidly losing ground with the European surgeons, and, although still vigorously prosecuted in this country, has certainly not attained any great success. Appa-

rent cures have ended in a return of the hernia so frequently, that Dr. Nott, of Mobile, who has just visited the leading cities of Europe, declares that the operation is almost universally abandoned.

There is nothing then to depend upon but the palliative method by which the bowel can be kept from protruding through the opening, and the subject thus saved from constant peril. Here, too, much ingenuity and inventive talent have been exerted, so that we may justly say, "of making trusses there is truly no end."

The beautiful instrument, a cut of which may be seen at the head of this article, is the invention of Dr. J. W. Riggs, of New York, and has, in our opinion, advantages of construction worthy of especial notice. Made of strong but delicate steel spring, the back and hernia pad is of *hard rubber*, and the whole thoroughly japanned with gutta percha, rendering the truss by far the simplest and most durable of its kind. Impervious to the discharges of the body, it always remains neat; is pleasant to the wearer, and deserves, without doubt, our admiration for its elegance and finish.

The real value of the Riggs Truss, however, consists in the principle upon which it exercises its pressure on the hernial ring. The pad, instead of being convex, and hence constantly tending to *enlarge* the opening, is rose shaped, with its fascettes encircling the ring and exercising their pressure, so as to produce a *closure* of the orifice and a radical cure.

There is another valuable feature in this truss deserving of mention: the lobulated pad tending to approximate the edges of the ring, also permits the vessels and seminal tube of the spermatic cord to lie easily and comfortably in the sulci between the lobes, and protects them from pressure; whereas, with the usual convex pad, these important parts are compressed, the circulation of the blood in the testis impeded, and the vas deferens contracted in calibre cannot permit the easy passage of the seminal fluid. Those serious objections to the common truss resulting in the permanent disability of the sufferer are happily obviated by the apparatus of Dr. Riggs.

The mechanical skill of this gentleman has been recently exerted in other useful directions. The profession are familiar with his instrument for the operation of radical cure of hernia, used by Dr. Carnochan, of New York, who reports favorably on its results. He has also attempted to relieve hemorrhoids by introducing a rectal pessary which can be dilated with air at pleasure, so as to exert equable and steady pressure on the enlarged veins, and his adaptations of machinery to make permanent pressure on varicoles and varicose veins are also suggestive and ingenious in their design. *

OUR EXCHANGES.

The Editorial Fraternity deserve our grateful thanks for their kind and truly encouraging notices of the *Journal* during its past career, and especially for their cheering expressions of good will toward the present arrangement. We earnestly desire to merit their commendation, and, with the active and able support of the Profession in Maryland and Virginia, whose cause is indeed ours, and whose interests and honor we hope to defend, we may expect to retain the approbation of the public.

An apology is due to our friend *Dr. Bemiss*, of the Louisville Semi-Monthly Medical News, for our neglect to place this valuable periodical on our exchange list. The error, which has been *our* loss, is now rectified, and we hope to gather much valuable matter from its pages.

The Boston Medical and Surgical Journal has lost the services of their late editors, Drs. Moreland and Minot, who, for five years past, have conducted that publication with ability and good taste. Drs. F. E. Cliver and Calvin Ellis, who

* NOTE.—The Riggs Truss may be seen at Messrs. Meade & Baker's, in Richmond, or can be obtained from the inventor, 448 Broome street, N. Y.

succeed them, are both known to the profession favorably, and the *Journal* will, in their hands, preserve its old and well-deserved reputation.

THE MARCH NUMBER.

The next issue of the *Journal* will appear *early* in March, and thereafter punctually on the first of each month. The Clinical Lectures of Professor Smith, and original articles by Dr. Turner, of Petersburg, Dr. White, of Baltimore, and other matters of interest, will be included in that number.

As our arrangements for the careful reviews of new publications become more complete, we confidently anticipate giving much additional value to that important department of every medical periodical.

VARIETIES.

Hunter's Lectures.—Hunter was not a popular lecturer, Dr. J. C. Warren tells us. "His mind was too much elevated by the sublimity of his pursuits to allow him to study the language in which he was to communicate their results. He had only about twenty pupils at his lectures." Among them was Dr. Gartshore, of London, who, the facetious Wadd relates, regularly visited Mr. Hunter's lecture-room, and, after taking his seat, wound up his watch, and then fell asleep.

Levett.—It was observed of Dr. Johnson's friend, Robert Levett, that he was, perhaps, the only man who ever became intoxicated from motives of prudence. His patients used frequently to substitute a glass of spirits for his fee, which Levett always accepted, reflecting that he would otherwise be no gainer by their cure, as they had probably nothing else to give. Dr. Johnson says, that "this habit of taking a fee, in whatever shape it was exhibited, could not be put off by advice or admonition of any kind. He would swallow, continues great Samuel, what he did not like, nay, what he knew would injure him, rather than go home with the idea, that his skill had been exerted without recompense." Dr. Johnson's researches discovered

that this singular person was born in Hull, in the year 1704. In early life, he was a waiter in a Parisian café. The surgeons who frequented the place, finding him of an inquisitive turn, made a purse for him, and procured him admission to the lectures of the Faculty. It is uncertain where the middle portion of his life was spent. For twenty years he walked over an immense circuit in London to attend to a multitude of poor patients. When he was near sixty, he married a woman of the town, whom he met in a coal shed in Fetter Lane, where she persuaded him that she was a person of fortune. After four months, he was arrested for debts of her contracting, when a separation took place, and Johnson took the poor surgeon home. Johnson says that, compared with this transaction, the marvels of the Arabian Nights seem as familiar occurrences.

Medical Tract by Marat.—The infamous Marat appears to have been once in Edinburgh, and also to have been the author of a tract, entitled "An Enquiry into the Nature, Cause and Cure of a Singular Disease of the Eyes, hitherto unknown, and yet common, produced by the use of certain Mercurial Preparations. By J. P. Marat, M. D., London, etc." At the end is a note which mentions his having been "at Edinburgh last August (1775)." The concluding paragraph is worth quoting, as showing how a man could write like a philanthropist, and afterwards act like a monster—

"If we cannot always be the happy instrument of alleviating the misery of the unfortunate, it is, however, a sort of service tendered to them, to prevent their being made worse."

Marat does not figure as a medical writer in Dezeimeri's Dict. Hist., and in the Biograph. Univ. no mention is made of this medical tract; but Marat's residence in Edinburgh is briefly mentioned, and the "Chains of Slavery," and also several treatises on electricity, are attributed to him. In the medical tract, the subject of electricity is again alluded to.

Montaigne on Mineral Waters.—"I have seen, in my travels, almost all the famous baths of Christian countries, and for some years have made use of them, esteeming the bath, in general, to be salubrious. I have never, however, seen any extraordinary and miraculous effects there; but have found all the tales about such operations in these places ill-founded, although they may be much credited there, people readily swallowing what they wish to believe (*comme le monde va se pipant aysement de ce qu'il desire*). Yet I have rarely seen people who have been injured by the waters, and cannot deny that they excite the appetite, aid digestion, and give one new spirits (*nouvelle alairesse*), provided the health is not broken down seriously; in such case, I advise no one to visit the waters. The waters are not able to restore a heavy ruin; they can support a slight decline of health, or provide against the threatenings of some alteration of it. Whoever does not take a light heart there to enjoy the pleasures of the society, of the promenades, and of the exercise to which the beauty of the country around the baths usually invite him, will most assuredly

lose the best part and the most certain of their influence." [Could the most scientific and experienced of modern physicians have more truly hit off the right value of these watering places? It is curious to note how acute genius separates the false from the true, and traces up the effects produced to their true causes.]

Proverbs and Sayings on Doctor's Doings.—"If the doctor cures, the sun sees it; if he kills, the earth hides it." "The earth covers the mistakes of the physician." "Bleed him and purge him; if he dies, bury him." "The doctor is often more to be feared than the disease."—*Italian, French, Spanish.* Sir W. Hamilton said: "Medicine in the hands in which it is vulgarly dispensed is a curse to humanity rather than a blessing." Sir Astley Cooper avowed: "The science of Medicine was founded on conjecture, and improved by murder." "The doctor seldom takes physic," says the Italian. The German wit writes: "Physic does good always, if not to the patient, at least to the apothecary." The Spaniard tells: "It is God that cures, and the doctor gets the money;" and "if you have a friend who is a doctor, take off your hat to him, and send him to the house of your enemy."—*Proverbs of all Nations.*

Pinel and Couthon.—When Pinel undertook the management of Bicêtre, the Revolution was at its height. The notorious Couthon presided over the dread *Commune* of Paris, and when Pinel came to him to obtain permission to remove the chains from the madmen, he went himself the next day to the Asylum, fearing lest in such an act there should be some hidden attempt against the Democratic Government. When he saw the madmen, he turned to Pinel and said: "Are you not mad yourself to wish to deliver these *bêtes féroces* from their chains?" "No," answered Pinel, "for I am certain that their chains make these wretched people thus violent." "Do as you like," said Couthon. From this time the good work commenced. The following day he removed the chains from fifty, and from thirty more a few days afterwards. The Academy of Medicine has adorned one of its rooms with a picture of this scene of humanity. Shortly after this we are told that Pinel was seized by some of the ruffians of the day, under the pretext of being an aristocrat, and hurried off "*à la lanterne*;" and that his life was saved by an old soldier, one Chevingé, whom he had delivered from his chains in Bicêtre, and who had become his servant.

Light appears to have an influence in the transformations of amylaceous matters, dextrine, etc. By its sole influence it so modifies amylaceous matters as to turn them into sugar and dextrine when they are exposed to the solar rays at a temperature of 100 cent. It also would appear that animal starch (glycogenous matter) is transformed into sugar more rapidly and more abundantly under the influence of light than in the dark. It is very remarkable that animal fecula remains in the liver of frogs without becoming starch during winter, just as the vegetable fecula ceases its transformations. In these ani-

mals, also, the greatest richness in sugar coincides with the period of the ripening of fruits. The glycogenous matter may remain unchanged in the liver, like starch in tubers and grains, if the frogs are entirely removed from the light; then no sugar is formed. In this way we may explain the rapid disappearance after birth of the glycogenous matter which exists so abundantly in the skin of the fœtus.—*Report by M M. Corvisart and St. Victor.*

Remedy for Jaundice.—Sir: There is nothing new in the "Remedy for Jaundice." (Notes and Queries, No. 347.) Vanden Bossche, in his "Hist. Med. Animal," p. 414, informs us, on the authority of various physicians, and, among others, Feliz Platerus, the Professor of Medicine at Basle, at the end of the sixteenth century, that "if eleven lice (or thereabout) be eaten by persons in the jaundice, they will be of benefit to them," and that "the certainty of the remedy is proved by experience." There is luck in odd numbers, and "nine" is but the thereabout of "eleven." If any one feels interested as to the best mode of procuring the remedy, let him consult the plate in Vanden Bossche's work. O. A. M.

P. S.—Is there any thing more disgusting in this than that (as related by the same author) bugs "*vivis in penis organum immixtis*," should be used "*ad ciendam urinam*;" not dead and powdered, as Dioscorides recommends?

A Protest Against Early Rising.—Dr. Hall, in the February number of his *Journal of Health*, says:

We caution parents, particularly, not to allow their children to be waked up of morning; let nature wake them up, she will not do it prematurely; but have a care that they go to bed at an early hour; let it be earlier and earlier, until it is found that they wake up themselves in full time to dress for breakfast. Being waked up early and allowed to engage in difficult or any studies late and just before retiring, has given many a beautiful and promising child brain fever, or determined ordinary ailments to the production of water on the brain.

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New Series.

ART. I.—*A New Instrument for the Treatment of Fractures of the Lower Extremity.* Clinical Lectures, by N. R. SMITH, M. D., Professor of Surgery, University of Maryland. (Continued.)

GENTLEMEN,—I wish you to observe to-day some practical points which are necessary to be remembered in the application of the “Anterior Splint” to the various fractures of the bones and injuries to the joints of the lower extremity for which I have recommended it.

In the case before you, see one of the modifications to be obtained by using starch upon the supporting bandages. This man sustained a fracture of the lower third of the tibia and fibula on the 25th of December, by falling upon the ice. He was intoxicated at the time, and could give no clear account of the manner in which the accident happened. He came into the house on the 26th, considerable tumefaction and ecchymosis existing. The “Anterior Splint” was immediately applied. The case improved slowly, so that upon the 30th of January, after re-applying the bandages, I determined to starch them; because it was intended to keep him in the apparatus some time longer. The intention of this is to protect the limb, bandages and dressings from injury in covering and uncovering

the bed in winter, (and, indeed, the covering around the limb is sufficient without the bed covering); to give them more firmness, and, in short, to render the apparatus more protective and permanent.

Observe what a firm coating it forms for the whole limb. In this shell, as it were, it rests as perfectly fitted and secure as the coverings which nature has adapted to any of the crustaceous animals. Because the shell is hard, it is none the less easy. Were it of marble, or sheet-iron, if it were but accurately adapted to all the irregularities of the limb, so that every muscle would be in perfect repose, the same comfort would be obtained—provided there occurred no displacement. Why is it that the limb is more comfortable when placed upon a soft pillow? Simply because the impressible material is accurately adapted to the shape of the limb.

In this case both bones were broken—therefore, the heavy foot and the lower fragments of bones were only attached to the leg above by soft and yielding tissues. How shall I steady this lower portion that the upper may be brought to it in apposition?

The adhesive plaster and the bandages attach it to the foot-piece—it rests upon its sole—the casing is hard—it is immovable.

The tendency in fractures of this kind (and it was the case in this) is for the upper fragment to ride over the lower, owing to the sinking of the latter, and, if not carefully attended to, an angular deformity will result. I have, therefore, interposed a bolster between the Splint and the lower extremity of the upper fragment, and forced it in apposition with the lower. This end is perfectly accomplished.

It is an important matter to select properly the points of attachment for the suspending cord. See, if I allow the limb to hang by but one cord, it is entirely unbalanced. In the wooden splint I use small iron eyes, with a screw end; but on the wire splint, the suspending attachments are movable. The general rule for the attachment of the cords is that one end should be above and the other below the seat of fracture. In

this case it would be better if the inferior attachment was still lower.

In fracture of the thigh I place one of the hooks a little below the middle of the thigh, the other midway between the knee and ankle. In fractures or injuries of the leg the superior suspending point should be but little above the knee, the inferior one below the point of injury. When we want a larger surface of the instrument, to sustain more weight, observe how the lower attachment may be accomplished. I take a strip of a roller twelve inches in length, and with figure of 8 turns of the bandage around the foot, embrace the heel and ankle, so as to furnish a complete cap to the heel, with also a few turns above the heel for further support. I so attach it to the anterior surface of the limb that this piece of roller may be placed in the hook, and serve to suspend the limb. Here the whole sole of the foot and the heel sustain the weight of the lower fragment. This substitute for the eye in the wire splint could not be used simultaneously with the independent bandage, when the injuries were low down near the ankle. In every case of fracture, let the points of support be where they may, the limb must *always* be properly balanced. I am often questioned by those who are in the habit of using a number of wooden splints, or wooden boxes, with the sides to turn down, or other complicated apparatus, made with much trouble and ingenuity (as is practised in a neighboring city) as to the lateral support.

Surgeons in the habit of using such apparatus as these have reflected very imperfectly on the mechanism of this instrument. Every turn of the roller here gives lateral support, because the pressure is concentric; that is, in proportion to the weight of the limb the pressure is towards the centre. But, if from a vicious contraction of the muscles, or other cause, I desire to employ lateral splints, they can easily be applied. For this purpose I have sometimes used adhesive straps; sometimes binder's board, or gutta percha, or a light wooden splint. First elevate the limb, then lay on the lateral splint, and with an independent bandage, secure it in its proper bearing.

It is well that I should make some explanation as to the matter of time—I mean the time required for the union of fractures, and particularly where this instrument is employed. It is a well known fact, that where the means employed to secure union are uncomfortable to the patient, or when, from any cause, it becomes necessary to disturb the position of the bony fragments, whether they be in co-aptation or not, the amount of provisional callus is thereby increased. We avail ourselves of this law, under certain circumstances, to secure an effusion of provisional callus for the benefit of the patient. Therefore it is that these fractures, which are ineffectually supported, sometimes appear to unite rapidly. But time, as it respects the proper use of the limb, is *not* shortened in these cases. The large mass of callus acts as a foreign substance. It may interfere with the action of muscles, or give pain by pressure, and means must be resorted to, and time must be had, for its removal. The case before you is illustrative of this point. This man was placed in the apparatus on the 26th of December, that is, six weeks from date. True, he might now move about with the starched bandage upon the leg—and, had it been a case of simple fracture merely, might have done so sooner—but I do not find a remarkably rapid union of bone where the “Anterior Splint” is employed, and for this reason: Nature sagaciously discovers that she is properly assisted, and makes no extraordinary effort on that account. The support is so even, the repose so perfect, that a cure is accomplished with but small effusion of surrounding callus. When the union is completed, it is perfect, and hence, all things considered, time may be in reality saved, as well as trouble and pain.

In every apparatus for fracture of the lower extremity, (excepting the “Anterior Splint”) the heel is the most painful point, and gives the surgeon most trouble. It is liable to slough, and particularly in the wooden box apparatus. Here the weight of the limb rests upon it, and it is usually protected by interposing some soft substance—as cotton or wool—between it and the wood. And still, as it suffers, the inexperienced surgeon tucks more soft material beneath, and thus, each time,

aggravates the mischief. The higher it is elevated, the greater the weight given it to support, and thus the heel gets worse and worse. The arrangements here shown demonstrate the resources of this instrument. The moulded support of the roller is not likely to affect the heel injuriously. And even, should it be removed upon this account from another apparatus, by adhesive straps, applied contiguous to the painful point, the limb can be secured to the splint above.

If you reflect upon this instrument, it will scarcely need my recommendation to commend it to you as of great value in the treatment of inflammations of the joints of the lower extremity. The easy postures which the limb may be made to assume, insure its value in injuries and inflammations of the hip. Add to this the principles of its concentric pressure, and the independent bandage, where the knee joint is concerned. These also apply to the ankle, with the addition of the readiness with which topical applications can be applied, without the necessity of disturbing the repose of the limb.

A man was bitten by a vicious dog, and one of the canine teeth penetrated the capsular ligament of the knee-joint. He was admitted into this house, and you were eye-witnesses of the amount of inflammation, the readiness of the relief, and the celerity of cure of the patient, who is now discharged. A woman was brought from the county, where she had been confined to the bed, with an inflammation of the knee-joint, for fourteen weeks, and placed in one of the hospitals of this city. I have an account of the case from the competent surgeon under whose service she happened to fall. So soon as the "Anterior Splint" was applied, and the limb was swung from the bed, immediate relief was afforded; and by this means alone, with paying attention to the constitution, a speedy cure followed.

I will not detain you longer by a detail of more cases; the principles advanced concerning this instrument will now be left for your consideration.

ART. II.—*Oriental Ophthalmia*. By WM. MASON TURNER, M. D., Petersburg, Va.

No subject in medicine has brought forth more controversies, called into existence more elaborate treatises, about which in fact so much has been said, and so little positively determined on, as the *purulent conjunctivitis of the East*, or as it is sometimes known, the *ophthalmia of armies*. A great many writers on the subject, 'tis true, egotistically satisfy themselves that they are well acquainted with everything concerning the affection which is of any avail theoretically or practically, and with cunningly worded phrases, and well turned sentences, seem indeed from a casual survey, or even a temporary scanning of their works, to write sensibly, or as men satisfied on a certain point—men who adduce apparently, and only apparently, good reasons on which they base their satisfaction.

In treating a medical subject there is in general a plan, or rather an analytical mode of dividing the subject in detail, which, when thus treated, is rendered far more comprehensible both to writer and reader. The mode, as every medical student knows, consists in defining (if a disease) the cause—its complications—its march—duration—prognosis—diagnosis, &c. Now when we examine *any article* written on this subject, each of these headings is well treated and fairly disposed of until we come to *cause*; and here there is in fact a total, if not in every case a confessed blindness. Assalini, a surgeon attached to the staff of the Prince Eugene, during the expedition in 1793 to Egypt, contends, as all know, who think at all on the subject, without a shade of reasoning, that the *cause* of the DISEASE in the first place, and of its propagation in the second, *is the climate of the country*. He lived long enough to see this ophthalmia in Belgium, Germany, and Spain, and yet he never believed, or at least never wrote (for he could not but have credited his own senses) differently. M. Desmarres of Paris remarks of Assalini in this connection, “but this opinion some have well thought, cannot explain why the disorder makes such numerous ravages on men *en masse*, while it spares

those who are *isolated*—yet who, aside from this, are placed *under the same circumstances*." The fact is, M. Assalini wrote before he had had sufficient experience, and before he was warranted in forming *any* conclusion. Dr. Mackensie, who among other things doubts most strongly the contagiousness of the disease, thinking it like leprosy (eastern) simply *hereditary*, also attempts to assign *causes* which give rise to this disorder, and indeed the Dr. in one case so far forgets his logic as to urge *the simple fact of its being hereditary* as the *cause*, forgetting that what is applicable to a present generation was inapplicable to a former—in other words, overlooking prime causes and their existence.

There exists, undoubtedly, a great tendency for this disease to be developed in the valley of the Nile and in some warm countries neighboring the Nile; in all Egypt in fact, and in much of Syria it prevails to a large extent—yet there are other countries within the tropics which are indeed warmer than those regions, and there this purulent ophthalmia has never, by any record, made its appearance—for instance, some portions of the Burmese Empire. But most writers contend that great heat is one of the necessary agents in exciting the malady. This does not hold good without exceptions. Others, on the contrary, suggest, as Desmarres, that the changes of temperature from "great heat to considerable cold" may originate, or did originate the disorder, which afterwards became, through inherent properties, contagious, and by its contagiousness was spread over the world. We know that it attacked the French and the British soldiers during the expedition which we have before mentioned—that it was unknown in Europe, according to *best* authority, until the return of the armies—that it prevails much near the Nile—and that is about all we do know without resort to speculation, of course taking it for granted we have learned *something* of its *progress, treatment, &c.* We also know, that generally its attack is sudden, as among the first things we notice is a mucopurulent and acrid flow from the lids—that its march is rapid, sometimes it has been known to have been finished in

two hours—sometimes in twenty-four—and that its termination is *decided*, in one way or the other. Besides knowing this, we *very justly, perhaps*, infer the truth of much else, and among other things, its cause, probable contagion, &c., yet although we, the medical world, have had ample opportunity to study the affection, *nothing more* is absolutely *determined on*. Thus think at present Desmarres and Sichel of Paris, and Graffe of Berlin, all of whom I have heard on this interesting topic.

At present there is much purulent ophthalmia of this nature in France, Germany, Middle Italy and Belgium, and some, strange as it may seem, and in contradiction to the *heat* theory, in the highlands of Scotland. I have seen some cases, but very few, in the United States, and even concerning them there was a difference among medical men, as to the diagnosis. Wherever seen though and definitely determined to be eastern ophthalmia, it has extended itself not only from mass to mass, or assemblies of men, but also from individual to individual. Though some do deny now, and many have ever denied it to be contagious, yet the different hospital reports of Paris, and of different parts of Germany, and the incontrovertible testimony of medical men whose names are alone a sufficient guaranty for correctness—place the fact, *the contagiousness* of the disease, far above doubt. And the *one* experiment of Dr. Mackensie is not only met, but overwhelmed by a host of others, which for years have been the results of the patient and constant labors of many of the brightest ornaments of the healing art.

The object, however, of the present paper, was chiefly to spread before the medical portion of the community at large, some *facts* gleaned by personal experience relative to this disease, and which, as *practical facts*, might be sufficient to place them in importance far above useless theorizings. It was my fortune while on the other side of the Atlantic, to visit the far-off land of Canaan—and still later to wander through the fertile valley of the Nile—even to Cairo. During my visit, which was chiefly one of pleasure, I did not neglect to search, as far as I was able, into the nature, state of existence, conta-

gion or non-contagion, duration, and especially the *treatment* of this formidable ophthalmia, of which there was more than enough material for observations around me. From the moment I landed at the old custom-house stairway in the ancient port of Jaffa, until I took the steamer *en route* again for the west at Alexandria, on my return from Egypt, I saw cases of Egyptian ophthalmia in almost every stage of the disease. In fact, so common and so *expected* was this terrible sight, that I was surprised when I found *in the towns* more than two or three together all having sound eyes. It is not confined to any age or sex, but according to my observations was alike seen in the young, in adults, in the middle aged and the superannuated. It is true, I saw in the older persons thus affected more *results* of the ophthalmia than in the young—yet there ophthalmia *had* existed, and its effects were apparent. Yet notwithstanding the *abundance* of the affection, its rapid march, and its ever-expected fatal termination, 'tis singular to see, considering the *facts*, how few *blind* people there are, either in the streets of Jerusalem or in the confines of Cairo. There are many poor, miserable wretches indeed, who turn their sightless sockets, for there is nothing of the *globe* left, towards us in soliciting alms—but they have much reason to be grateful that this frightful malady is not worse in its effects than it is. There *must be* something in acclimation, or in a *hardening* to the disease; for if this ophthalmia should continue to sweep with this malignant virulence throughout Egypt and the East, as it did when it spread havoc through the French and British armies, there would not in truth be left any to see the light of day, and so far as the inhabitants are concerned, there would indeed be “darkness over Egypt.”

It appears to me, from facts that I could gather, that the affection *must be* hereditary, as children have been born who are affected with the disease *as soon* after birth as an *examination could be made*, and I have heard, but without sufficient authority, I fear, that a post-mortem once revealed the existence of this dreadful disorder in the *fœtus*. Certain it is, generally speaking, children are born with the eyes *closed*, and

remain to a time, more or less short, so that it is not reasonable to suppose that they should have contracted the disease immediately on exposure to light, or that the disease should be found advanced even to the *suppurative* stage so early. I was assured that some children lived to an old age (blinded from infancy) with this affection. Very often I observed many to have lost completely one eye by the escape of the humors and the collapse of the globe, while the other eye remained healthy or sufficiently so to be useful as a seeing organ, yet both eyes sympathize throughout the disease. The disorder prevails to a much greater extent in the towns and villages than it does in districts essentially rural; for instance, in Jerusalem, in Syria, and in Cairo and several towns in Egypt, we see far more than we do in the desert or in regions near Jericho and Jordan. It is far more rare to see the raw Beddwy afflicted than it is the denizen of the town. In the village of Siloam, on the mountain side, in sight of Jerusalem, the ophthalmia *constantly* prevails to an alarming extent. Strange, then, should the disease be contagious, that none of our party were attacked. There was one gentleman with us whose left eye had been badly inflamed, attended with a little chemosis ever since we sailed from Malta, and which was aggravated to some extent on his arrival in the Holy Land. But an alum curd and a dose of sulph. magnesia completely cured him, showing that it was not of the variety known as Oriental ophthalmia. I myself was attacked, when I had arrived, some two or three months after, in the United States, with what I thought a species of ophthalmia of a non-malignant type. I paid no attention to it at first, thinking it a temporary inflammation, caused by exposure to sharp winds, but the inflammation deepened; there was intense pain, and, after a day, there was every evidence of granulations and a muco-purulent discharge, which was slightly exco-riating to the cheek as it poured over it. I first tried general depletents or drastic cathartics, at the same time using light collyria of aqua camph., aqua ros. and zinc, but the only effect was to add to the inflammation. The eyes were fast agglutinated in the morning and the simple act of freeing them was

excessively painful and aided to keep up the irritation present. I then, at the advice of a fellow physician, who concurred with me, tried nit. argent., in strength half grain to the ounce aqua dist.; at the same time, from urgency of the moment, blistered the temples. The attack was moderated, and the progress checked; yet so soon as the silver was dispensed with, so soon would one or both of my eyes take on most violent inflammation. Finally, I thought of Dr. Sichel's favorite astringent, zinc sulph. in *certain obstinate* cases. I used it in proportion gr. xx. to ounce; but, instead of water, the vehicle I employed (allow me to say it was suggested) was the white of an egg, which is nothing in itself. With this strong preparation, I *moistened* the *lids* and *globes* a dozen times a-day. The good effect was soon seen, and I now consider my eyes as permanently cured. Whether or not this was Eastern ophthalmia, I cannot say. If Eastern ophthalmia, it should have developed itself, according to the known nature of the disease, at an earlier date. It possessed several points of marked resemblance however, but probably none more marked than those relative to the ophthalmia neonatorum. At all events, it was a troublesome affection, and I never suffered more from any other of the many evils "to which flesh is heir."

I paid much attention to this disease while I enjoyed the opportunity; and, among other things relative to it, I observed a tendency in all afflicted to hold the head in such a position as to shield the eyes from light—this position diametrically opposed sometimes as at sunrise, or in the morning, and at sun-set, or in the afternoon. In fact, this attempt to screen the face is almost pathognomonic of the disease, according to my observation. Another fact, which I observed, was that the redness of inflammation was at one time *fasicular*, and at another time *diffuse*, and sometimes diffuse in *one eye*, and *fasicular* in the *other*. During its more active stages, there was a serous and muco-purulent discharge all the time. I made particular inquiries as to *treatment*, and found that a strict attention to cleanliness, of which the Turks and Arabs

are not guilty, a good tonic constitutional treatment, an active depletion, and the use of act. plumb. and nit. argent., is a most efficacious and satisfactory mode; although there is some danger of a corneal speck being produced by the carbonate of lead formed in the employment of act. plumb., yet I have never heard of such a result *here*. *Astringents, cleanliness and tonics* can be summed up as treatment.

Dr. Sichel, of Paris, a better ophthalmist than whom does not live, under whom the celebrated Desmarres studied, and to whose lucid teachings I was privileged to listen, treats purulent conjunctivitis or ophthalmia of adults thus: (cauterize in the first stages, and only then,) *deep and repeated scarifications* of the *chemosis*, *astringent injections* freely administered and *ice-water* to the *lids*, when there exists *very much* inflammation. Desmarres, also, often avails himself of this powerful anti-phlogistic.—Leeches, according to indications, and, in general, depleting agents—sometimes anodynes—all however given according to indications, and according to the peculiar constitution under treatment.

Dr. Desmarres has a fine and concise chapter on this subject, which I have translated in full. At some future day, I may furnish you with some extracts therefrom, or the chapter entire; it is from volume second of his late magnificent and most elaborate work on the Eye—" *Maladies des yeux, par L. A. Desmarres.* "

ART. III.—*On the Principal Diseases of the Nervous System.*

By EDWARD H. WHITE, M. D., Baltimore.

IN dwelling upon this class of affections, I can offer nothing new or original. Nor shall I aim to criticise the views of those whose opportunities have directed them to their special consideration; but will be content with the endeavor to show the best recorded results of modern observation, and chiefly

with a view to present the deep importance, in a therapeutic point of view, of that light which clinical study and post-mortem investigation have thrown upon the subject.

R. B. Todd and Edward H. Sieviking are acknowledged among the most valuable laborers in this field of inquiry; and to their recorded observations and results, I shall be much indebted for the following imperfect epitome of the pathological history, diagnosis and treatment of this interesting class of disorders.

And before entering upon a consideration of the special forms of disease, we will refresh your memory by glancing at some of the more general facts, in their bearing upon the affection which will first claim our attention:

Paralysis is only a symptom of disease, and not in itself a disease. It is the effect of a disturbing cause.

An affection of a nervous trunk, in some part of its course, whether from violence or pressure, may destroy its power; or the centre in which the nerve or nerves are implanted may, by reason of a morbid condition, fail to supply these trunks with either mental or physical impulse, and, though healthy in themselves, can take no part in voluntary acts. So that whatever interferes seriously with the conducting power of the nerve-fibres, or with the generating power of nerve-vesicles, (gray matter,) will constitute a paralyzing lesion. Thus, if a portion of nerve of a living animal be soaked in chloroform, ether or opium, its power of propagating nervous force is destroyed so long as the influence of the poison lasts. The poison of lead, as well as those of rheumatism and gout, or retained biliary and urinary principles—as well as all processes that materially impair the nutrition of nerve structure, whether of atrophy, depending on imperfect or obstructed supply of blood, or of inflammation with its consequences—will induce similar results.

And in this immediate connection, without occupying our time with further remarks of a general nature, in which I should already be anticipated, we will glance cursorily at that form of palsy induced by the poison of lead.

When this poison has entered the circulation from exposure to its cause, for a sufficient length of time to become blended with the tissues of the body—a result sufficiently evinced in the blue line in the margins of the gums, where teeth still exist in their alveoli, and yet more satisfactorily shown after death in its notable extraction from the brains and muscles of those who have died from its results—its paralyzing influence may soon or later be exhibited in weakness or falling of the wrists and dropping of the hands; or, if yet more advanced, in loss of power in the extensor muscles above the elbow; so that the patient can neither extend his hands or fingers, nor elevate the arm at right angles with the body. If the patient have not been exposed to the action of the poison for a long time, its paralyzing effect may be limited to the muscles and nerves of the extremities, for which it has a special affinity; but if the exposure be of sufficient duration, it will ultimately blend itself with the constituent elements of the nervous centres, exhibiting its effect in convulsive movements and epilepsy.

When, through the gradual encroachment of the poison, the nutritive processes are all greatly impaired with corresponding deterioration and atrophy, the organic changes are palpably revealed after death. The brain especially is pale and soft; the convolutions wasted; the sulci between them wide. The spinal cord exhibits similar evidence of impaired nutrition.

With this view of its origin and pathology, the essential hygienic conditions consist plainly in the necessity of removing the patient from further exposure to every source of supply—in subjecting him to a pure air and sustaining diet.

With a view to the elimination of the poison from the body, friction, exercise and free bathing, so as to stimulate the excreting power of the skin, cannot be dispensed with.

Warm sulphur baths not only fill the latter indication, but are said to conjoin the advantage of neutralizing the poison, by forming with the lead some innocuous compound. Whether this be true or not, experience would seem to sanction its use in preference to the ordinary baths. From two to four ounces

of sulphuret of potassium, dissolved in twenty or thirty gallons of water, constitute its best form of administration.

With the object of additional elimination of the poison through the renal emunctories, as well as with reference to other influences, large doses of iodide of potassium enjoy a deserved reputation.

Galvanism and the preparations of iron, in the progress of the treatment, aid in the restoration of the weakened and wasted muscles.

The next form of paralysis, in this connection, claiming our attention is that in which the muscles of a part lose their power of motion from mechanical pressure on the nerve or plexus of nerves supplying them. As in the application of bandages to fractured limbs, &c., where the pressure on a nerve may be such as to damage its nutrition, and paralyze the muscles to which it is distributed. A result reported to have frequently occurred in the application of the figure of 8 bandage in the region of the axilla, compressing the axillary plexus of nerves, and inducing palsy of the arm of long continuance. A person under great fatigue, or in a state of intoxication, may fall into a profound sleep, with his arm resting upon and hanging over the back of a chair, from which he awakes with numbness and loss of power in the flexor and extensor muscles of the arm and hand, lasting a long or shorter time, according to the extent of structural nerve impairment. It being a law that the regenerating nerve-power acts slowly in the restoration of injured nerve structure.

Exercise of the limb, with judicious employment of galvanism, fulfill the chief indications of treatment.

Paralysis, also, occasionally presents itself under a different and somewhat peculiar set of circumstances. A female of hysterical constitution, being subjected to the exhausting influence of some depressing cause, either moral or physical, loses the power of motion in one arm, or in one leg, or, in a yet more limited degree, as in the hand, or in a single joint. Now, to comprehend the character of this form of disease, and distinguish it from the variety in which there is more direct

organic lesion, we must not fail to observe the accompanying conditions.

The sensibility of the affected part being undisturbed, the intellect unimpaired, the muscles of the face, tongue and deglutition being unaffected, and these, conjoined with the signs and history of the hysteric diathesis, would indicate the absence of cerebral lesion. And if it be a lower extremity that is involved, a characteristic mark consists in the dragging of the limb after the patient, as if it were an inanimate body, the foot sweeping the ground or floor in the act of walking. Whereas, in the paralysis of brain lesion, in the act of walking, the patient rests his entire weight on the sound limb, while the palsied one is thrown or lifted round by an act of circumduction.

Now, whether the loss of power over the voluntary muscles follow upon some impairment of the volitional centre or of the power of the will to control their movements, from the impression of some moral cause, or depend upon some source of physical exhaustion—there is equally pre-supposed the presence of the hysteric diathesis—the existence of a generally depraved nutrition, and especially of the nerves of the part affected, or of some portion of the volitional centre.

This being the aspect in which the pathology of this form of paralysis presents itself, there can be no difficulty in comprehending the proper indications of treatment. The restoration of the impaired nutrition of the general system, and, through it, of the nervous centres or nerves of the part especially affected, would constitute the essential aim of treatment.

The withdrawal of the patient from all depressing moral and physical causes, with pure air, proper exercise, and generous diet—as well as the judicious employment of the mineral and vegetable tonics—commend themselves to our immediate attention.

Failing in our object in the use of these general measures, we should then look to the restoration of the affected limb or part by judicious local appliances, in the use of friction, and

especially in cautiously repeated shocks from the galvanic current.

But, now, by way of giving a more distinctive and differential prominence to the class of paralytic affections already considered, we will direct your attention to those cases or conditions in which the phenomena are essentially dependent upon a paralyzing lesion of the brain-structure itself, or upon the consequences of a diseased state of its investing membranes, or upon some intra-cranial accumulation or pressure, indirectly affecting the central cerebral tissue.

Since the volitional centres exercise so direct and extended an influence over the voluntary muscles of the body, it will be readily apprehended that injury to the deeper-seated structures of the brain would much more readily induce paralytical results, and those of a far deeper character, than would follow upon injury or disease in the superficial portions or coverings of the brain.

But yet, as these centres are in themselves so extensive, and are so intimately connected, anatomically and physiologically, with the different portions of the nervous centres, the paralyzing lesion may vary essentially in its seat: their connections and sympathies subjecting them to the influence of lesions, not only in portions immediately adjoining, but to that of lesions in the more distant structures.

The common characteristic of a paralyzing lesion of the brain is, that it induces hemiplegia or paralysis of the muscles and limbs of one side of the body, and that opposite to the side or half of the brain in which the lesion exists. The lesion most frequently inducing this result is that of the optic thalamus and corpus striatum; but, as before said, the seat and attending circumstances of intra-cranial disease, resulting in immediate or a more gradual paralysis, are exceedingly variable and irregular in their nature.

A patient complains of pain in his head, which has existed for a long, or shorter, time—its only variableness consisting in degree of intensity. The locality being fixed in some one por-

tion of the head, and the pain itself of some considerable acuteness—qualities that indicate some form of irritative disease within the cranium, and most probably of the membranes or superficial structures. The deeper structures of the brain, as the corpus striatum and optic thalamus, when the seats of disease, induce pain, if it follow at all, of a dull and diffused character, and not referable to a particular locality.

Nor could it be mistaken for the form of acute pain along the course of the cranial nerves, dependent upon some digestive derangement, constitutional vice, or debility of system; since these change their locality from one point to another. In addition to this acuteness and fixedness of the pain, there may be dimness of vision, perhaps double vision at different periods, with disturbed and irregular movements of the eye-balls—the latter movement accounting for the double vision. After a time, preceded by occasional rigors or convulsive movements, there has followed loss of power in the muscles of the arm and leg; perhaps, first of the arm, and subsequently of the leg. In the patient's efforts at walking, it will be seen that the palsied leg is lifted from the ground, and not dragged along as if a lifeless body, presenting, in this respect, a striking contrast to the latter movement, so characteristic of the hysterical form of the disease.

As pertaining to the acuteness of the pain, the disturbed movements of the eye-balls, and the appearance of early rigors and twitchings in the muscles of the limbs, subsequently paralyzed, it will be found that the palsied extremities exhibit considerable rigidity of their muscles, resisting every attempt at extension; the extending force, in each instance, exciting by reflex action, rigidity and resistance of the antagonising muscles. A result which modern investigation has established, as necessarily pertaining to an irritative or inflammatory lesion, and to the irritated state of the nerves connected therewith.

But, in addition to the symptoms named, there is also paralysis of the face and tongue, indicated by the flaccid state of the buccinator muscle, the hanging of the cheek, and the divergence of the tongue to the palsied side, in the effort to pro-

trude it, unless a projecting tooth, or similar cause, should change its line of deviation.

These conjoined symptoms ; the fixed locality of the pain on the side opposite to that of the palsy ; the disturbed vision ; the irregular and involuntary movements of the eye-balls, clearly connected with irritative disease along the course or at the origin of the the third pair of nerves, and the characteristic manner of lifting round the paralyzed limb, evince, beyond the probability of doubt, the existence of intra cranial lesion.

Now, as we have already seen, hemiplegia most usually follows upon disease of the optic thalamus and corpus striatum ; each, from the intimate bond of union between them, interchangeably and reciprocally partaking of the morbid influence of the other.

Disease of the deeper seated parts, as the crura cerebri, being the bond of union between the corpora striata and spinal cord, and thereby forming a part of the great centre of volition, will also induce paralysis.

So will disease of the cerebellum or its crura, if deep-seated, produce hemiplegia ; owing to the connection between the hemispheres of the latter, and the pyramids in the pons Varolii.

And in proportion to the extent of disease in the volitional centres, or in the parts immediately affecting them, will be the completeness or incompleteness of the paralytic phenomena. If the lesion be confined simply to impairment of structure, whether from inflammation or from the disintegrating result of atrophy, there will be paralysis of motion only, and, perhaps, of sensibility ; it requiring the super-addition of pressure from some compressing cause, to induce impairment of consciousness—a pressure, for the most part, acting immediately upon these deeper portions ; or if, upon a more distant part, required to be greater in extent.

Now, in regard to the assemblage of symptoms in the supposed case under consideration, it is clear that a pain so constant in its locality, and so acute in character, is indicative of disease either in the membranes or in the superficial portions of the brain ; and that, as disease of these membranes is not

likely to continue long without the exudation of lymph or pus, which, gradually increasing, causes pressure on the surface of the brain, extending slowly to the optic thalamus and corpus striatum, the supervening paralysis is due to this source.

All the phenomena in the case would assign the ultimate results to such origin; the localized pain; the spastic or convulsive movements in the muscles of the limbs, and the slow accession of the paralysis, due to the subsequent exudation of lymph or pus, slowly and indirectly compressing the centre of volition, account fully for the attending circumstances of the case. The primary symptoms; the acute pain; the spastic state of the muscles, assuming in its progress resistance and rigidity in every attempt to extend them, point not only to an inflammatory nature of the cerebral lesion, but to a highly irritated state of the nerves connected therewith. In such a case the paralyzed limb loses but little of its normal conditions, the temperature, fullness of the muscles, and activity of its circulation, evincing but little or no disturbance of nutrition.

Now, with this rigidity, and the irritable state of the muscles and the nerves supplying them, occurring simultaneously with the seizure, or supervening early in the progress of the case, the diagnosis as to the irritative or inflammatory character of the disturbing lesion is clearly made out; and not only affords striking aid in the practical management of the case—but, by contrast, prepares us for a better appreciation of that class of cases in which the attending circumstances of the paralytic state wear an entirely opposite complexion.

An individual, with accompanying circumstances of life calculated to impair the blood-making processes, and to interfere with the nutrient functions of the system; or an individual of advanced age, with lowering of the vital powers, and more or less of degeneration of organic structure, is conscious, for some time, of a pain in the head—not acute, and not confined to a fixed locality, but dull and diffused, the common characteristic of pain in such cases; perhaps, accompanied by more or less of drowsiness—is suddenly seized with hemiplegia. Or, perhaps, the paralytic seizure has not been preceded by any very

definite premonition of pain or lethargy ; but the patient has suddenly lost the power of the muscles on one side of the body, with a hanging of the face, and the characteristic deviation of the tongue to the palsied side. But the prominent feature here, unlike that in the former class of cases, is the suddenness and completeness of the paralysis—the muscles being in a state of complete relaxation and flaccidity, offering not the least resistance or rigidity in any attempt at rapid or forcible extension : thereby showing the entire absence of that muscular and nervous irritability which pertains to the irritative cerebral lesion. And here, too, instead of maintaining the natural circulation, temperature and fullness of the palsied limbs, the muscles rapidly waste, bearing all the evidence of that debility and impairment of nutrition which so strikingly characterize the atrophic degeneration of the cerebral injury.

Here the presumption is, as will be readily apprehended, from the suddenness and completeness of the withdrawal of the power of volition, that the seat of lesion is in the corpus striatum or optic thalamus ; or, in all probability, in the immediate vicinity of these volitional centres ; and that the process of white softening or atrophic degeneration had gradually advanced to a point of solution or giving way of the structural fibres, to be followed by paralytic phenomena as instantaneous and complete as the former.

And here it may be remarked, that the paralytic symptoms are unattended by stertor or loss of consciousness ; since the disintegration or melting down of brain-structure may be unaccompanied by hemorrhage or other cause of pressure—a condition essential to the impairment of consciousness—its extent, bearing and exact relation to the incompleteness or completeness of the latter.

The degeneration of brain-structure in such cases may be due to an imperfection in the quality or quantity of blood from which the part derives its habitual nutrient supply ; and this, in many instances, is due to some form of degeneration in the walls of the vessels supplying the brain, there being atheromatous deposits, either upon or into their coats. A patho-

logical state not only revealed to us after death, but occasionally suggested in the evidence of a diseased condition in other portions of the arterial system—the arterial walls at the wrists or temples being thickened, and affording resistance to the touch, by reason of the atheromatous deposits into their coats: nor, with this general impairment of blood and vascular structure, is it unusual to find cardiac valvular murmur, from regurgitant disease at the mitral orifice—the valves being the seat of similar degeneration—and the heart thereby rendered incapable of supplying the brain with its usual amount of blood:—An association of cardiac and cerebral disease, which has long attracted the attention of the profession.

And here it may not be uninteresting, or entirely devoid of usefulness, to call in review a few of the facts over which we have passed. I allude to the respective condition of the muscles, in the several classes of cases to which we have called your attention, as well as of other varieties or aspects of the disease to be referred to in future.

The relaxed, flaccid, and wasted state of the muscles has so direct a relation to the depressing nature of the brain lesion, that it becomes an important element of guidance, to a just appreciation of the disease, the general condition of the patient, and the nature of the treatment we are called to pursue. The entire evidence of local and constitutional impairment of nutrition and vitality being such as to demand an upholding and sustaining treatment; not only in the administration of ferruginous and other tonics, cautiously adapted to the assimilative capacities, but in placing the patient under all the circumstances of diet and air favorable to the improvement of the blood and the repair of structure.

Nor are the spastic condition and convulsive movements of the muscles, which precede the seizure, and the state of rigidity and contraction into which the paralyzed muscles are thrown upon every attempt at their extension or movement, appearing simultaneously with the seizure and following its progress, of less importance in enabling us, through their contractility and

irritability, and the immediate relation they bear to the morbid condition of the nervous centre, to form a just estimate of the nature of the disease under which our patient is suffering. The irritated state of the nerves and muscles, partaking exactly of the character of disease in the brain-structure with which they are connected, teach us clearly that the paralyzing lesion within the cranium is irritative and inflammatory in its nature; and that the treatment demanded at our hands, other conditions admitting, must be antiphlogistic in character. That local blood letting, and, perhaps, venesection, with counter irritation over the seat of pain, by tartar-emetic ointment, are suitable measures of practice. That evacuating the bowels by mercurial purgatives, with a view to depletion, as well as to their derivative influence, and subjecting the patient subsequently, if need be, to the constitutional action of this agent, would also be indicated by the necessities of the case. The spastic and rigid state of the muscles alluded to, an essential aid to diagnosis, has one essential element which it is highly important should be kept before the mind of the observer: lest it become the means of confounding its peculiar set of lesions with those of a different nature, in which rigidity and contraction are also accompaniments.

I allude to its supervention early in the seizure or simultaneously with the paralysis, as indicating the irritative nature of the lesion; whereas, rigidity and contraction of the paralyzed muscles sometimes succeed late in the progress of the seizure. The paralysis being completed, and the muscles, throughout the early period of its existence, partaking of the relaxation and gradual wasting peculiar to a depressing and non-irritative cerebral disease. The rigidly contracted state of the muscles, in this set of cases, is seemingly due to nature's effort at repairing the degenerated brain-structure, the cicatrization inviting to itself more or less of exalted sensibility; and possibly the cicatrized portion itself acting somewhat as a local irritant to the immediately surrounding tissue, and imparting its perturbation to those muscles and nerves that are in direct relationship to the seat of lesion. Now, it will be seen, that,

under these circumstances, the treatment should not be antiphlogistic as in the former class of cases, but should be directed to the end of sustaining the nutritive processes, and of fostering the repair and cicatrization of the injured structure. In the way of overcoming the permanency of muscular contraction, there is not, unfortunately, much to be hoped for. Friction, and exercise by repeated efforts at extension, are the only means offering the probability of advantage: these, in some measure, retard the shortening of the muscular fibres, and perhaps aid in maintaining the nutrition of the limb, but the ultimate result cannot be materially modified by such procedure.

And, that I shall not here be charged by my experienced and better informed brethren, with overlooking a set of cases, now and then falling under the observation of physicians, I must not omit the mention of those cases of paralysis in which the muscles differ but little from those of persons in health. The circulation, nutrition, and temperature of the limb being influenced in a very small degree. Here the paralyzing lesion is non-irritative in character, is of limited extent, and cannot be associated with any great general impairment of nutrition. Favorable hygienic circumstances and conditions, with proper attention to the organic functions, would fulfill the therapeutic indications.

Nor, in this connexion, would the omission of allusion to electricity and galvanism be justifiable, not merely as an agent to be cautiously used in restoring the nutrition of wasted muscles, in cases of long standing, in which there are no contra-indicating circumstances; but especially as a criterion or test of the difference in cause and character of the different lesions we are called to treat.

It is well known that Dr. Marshall Hall, the eminent laborer in this department of pathology, after a course of extended experiment, had drawn the conclusion, as an established law, that muscles paralyzed by reason of injury to the volitional centres, and consequent withdrawal of the influence of the will, had their irritability greatly exalted: and were consequently more excitable to the galvanic stimulus than the muscles

of the sound limb. But it will readily be seen that his experiments must have been confined to that class of cases in which the paralyzing lesion was irritative and inflammatory—whose paralytic muscles and nerves were in a state of like irritation and excitability: for it has been shown by subsequent observation, that in the opposite class of cases, constituting by far the larger number, in which the paralyzing lesion is atrophic and depressing in its character, the nerves and muscles connected therewith are in a state of similar depression and diminished vitality: and that, consequently, they would be far less excitable to the galvanic stimulus, and far less readily acted upon by its shocks, than those of patients whose paralytic muscles and brain lesions were in a state of irritation and exalted sensibility. The last class of cases alluded to in our series—those in which the cerebral lesion was not extended, and in which the paralytic muscles differed but little from a state of normal nutrition and integrity, would differ but little in their sensibility to the stimulus, from the muscles of persons in health.

Now, it were needless to state in what manner this difference of nervous polarity in the muscles and nerves of paralytic patients, should be applied in aid of our diagnosis—in aid of our capacity to determine the pathological character of the paralyzing lesion; and thereby become an auxiliary to a safe line of treatment.

(To be continued.)

ART. IV.—*On the Use of Iodide of Potassium in Neuralgia.*

By F. P. BIBBY, M. D., Almond, Alabama.

THE profession well know the difficulty of treating successfully the protean forms of nervous disease; and as the natural consequence, we have more remedies recommended for these affections, than probably for any other class of maladies.

This state of things will continue until we are able to explain more definitely the pathology of the nervous system, for we cannot expect to prescribe accurately, until we arrive at more certain conclusions as to the cause of the trouble to be remedied. Meantime, it is well to continue to observe carefully the effect of remedies in such cases, for much good may be effected by a medicine in the treatment of a disease, even though we may still be ignorant of the cause of the disease, or the mode of action of the remedy.

Without therefore attempting to explain how it acts, I can say, after some experience, that there is no remedy which seems to be more beneficial in neuralgias than the iodide of potassium in full doses. Exciting the secretions and excretions, it may be supposed to act by eliminating the morbid cause; and in this way probably we see its good effect in chronic rheumatism, chronic syphilis, and other analogous conditions, and for the same reason it may be expected to cure neuralgic troubles generally.

The following case I will give as an example of the benefit resulting from the use of the iodide of potassium in a neuralgic affection of long standing:

I was called to see a lady, aged 42, who had suffered with neuralgic pains of the neck and face, and extending to the shoulders and arms, for more than five years. For a long time she had been unable to walk or ride, but for a short distance, and had patiently tried all the remedies recommended by various physicians, without avail.

After an active purgative treatment for a few days, I prescribed for her the iodide of potassium in ten grain doses, three times a day, at the same time using a liniment of tinct. iodine, chloroform, and tinct. capsicum, equal quantities, to be rubbed frequently on the painful parts. The result of this treatment was, that the sufferer was relieved in two weeks, and apparently cured after six weeks. I hope and believe that this cure is permanent, as she has now for more than six months been in perfect health.

TRANSLATIONS AND SELECTIONS.

- I. *On Cerebral Symptoms independent of Cerebral Disease.*
By CHARLES WEST, M. D., Physician to the Hospital for Sick Children.

GENTLEMEN,—Of all the inquiries which, in private practice, the parents of a sick child will put you to, there is none that will be made so often or so eagerly as this,—“Do you think his brain is affected?” The answer which you give to this question will at once convey a sense of unspeakable relief, or will produce a feeling of blank hopelessness; either, perhaps, excessive, but either most natural. Without doubt the importance of a correct reply is very great, for your prognosis and your line of treatment are dependent on it, and an error, even though corrected in twenty-four hours, may be irreparable. I think, then, that the time will not be misspent which we devote to-day to an examination of the different circumstances wherein we are most likely to meet with the symptoms of cerebral disorder independent of real cerebral disease. Now you may encounter such symptoms in two different conditions: either in the course of acute affections simulating active disease of the brain, or in the course of chronic ailments, where there may seem to be reason for apprehending the advance of slow disorganization; and each class of cases demands a separate consideration.

Before examining either class of cases in detail, I would, however, remind you that in the child, as in the adult, the brain is disturbed more or less in the course of every acute affection of the general system; and further that in proportion to the youth of the child there will be an apparent sameness in the characters of such disturbance, and a consequently increased difficulty in determining the cause whereon it depends. Thus, for instance, whether one of the exanthemata is about to come on, or influenza, or inflammation of the lungs, or whether the illness is a mere febrile attack consequent on dentition, there will in all these circumstances alike be a hot skin, and a frequent pulse, a loss of cheerfulness, a heavy head, a disposition to drowsiness, and yet a state of unrest; symptoms, in

short, which are just the same with those that in the infant would attend the early stage of actual disease of the brain.

But while I refer to this fact as one never to be lost sight of in the endeavor to discover the true import of the cerebral disturbance which accompanies almost every form of acute illness in early life, my special object to-day is to point out to you some of the circumstances wherein, in infancy or early childhood, a correct diagnosis is peculiarly difficult.

I propose to notice very briefly—

1st. The cerebral symptoms that usher in the attack, or accompany the early stages of fevers.

2d. Those which at the onset of acute inflammations of the thoracic viscera, sometimes throw the evidences of the real disease into the shade; and

3d. Those dependent on some disorder of the abdominal viscera, which though not always itself of an acute character, yet gives rise to sudden disturbance of the nervous system, and to symptoms that simulate active cerebral disease. Such are sometimes the consequences of unsuitable food, of diarrhoea, of colic, and of intestinal worms.

Afterwards, if time allows, I purpose—

4th. To make a few observations on the more chronic ailments, in which cerebral symptoms are likely to be observed, and their import is apt to be misapprehended.

Now with reference to cases of the *first* class, namely, to those in which cerebral symptoms usher in the attack, or accompany the early stage of fevers, I may observe, and the remark holds good in other cases also, that in proportion to the suddenness of the onset, and the violence of the character of such symptoms, is the probability of their depending on real disease of the brain so much the smaller. A severe attack of convulsions is rarely an early symptom,—is almost never the first symptom of real early disease of the brain. Its occurrence, therefore, always raises a presumption that its cause is to be sought in some source of irritation external to that organ; that, how much soever the immediate urgency of the case may require remedies addressed to the brain, the ultimate dangers of the disease will be found to depend on some other cause, to arise from mischief seated elsewhere than in that part which at first seemed to be the most suffering.

The early stage of the eruptive fevers sometimes affords a very remarkable illustration of the amount of disorder of the nervous system, which may precede or accompany the full outbreak of the rash. During the first day of the eruption of measles, for instance, one or two attacks of convulsion sometimes occur, though they usually pass away without being fol-

lowed by protracted coma, or by any abiding signs of cerebral disorder. In these cases the previous existence of the morbillous catarrh, often even the presence of faintly-marked stigmata of the rash, the general heat of skin more intense upon the trunk than even about the head, will usually preserve from error, and you may speak with confidence as to the probably speedy disappearance of the cerebral symptoms. Far more serious, however, are the signs of cerebral disturbance by which small-pox and scarlatina are occasionally ushered in; the transition from apparent health to violent convulsions being sudden, and apparently causeless, the fits themselves most formidable, and the coma by which they are succeeded very profound. Such was the case of a little girl, two years' old, who, until the day before that on which I saw her, had never had an hour's illness. She had eaten a hearty dinner, and though she vomited soon afterwards, did not seem otherwise indisposed, and slept well in the night. Immediately on waking in the morning, however, she had a fit, during which she was insensible, much convulsed, and insensibility, with occasional convulsions, and great heat of skin, continued for the ensuing twenty-four hours. Depletion, both general and local, the latter twice repeated, was followed, at the end of twelve hours more, by considerable diminution of the convulsive movements; and forty hours after the first fit, the child fell asleep, and dozed quietly for a few hours. She awoke sensible, and continued so. On my visit in the morning, I found her quiet and sensible, without any signs of convulsion; her face was very pale; her head, before so hot, was now quite cool; her pulse had sunk in frequency, and had lost its fullness. An eruption of a papular character had appeared on the hands, arms, inside of the thighs and slightly on the face. This eruption was the small-pox, and the disease ran its course without an unfavorable symptom.

The comparative rarity of small-pox may be some excuse for my not having been prepared for the possibility of the convulsions depending in this case on the cause to which they were really due; but it is well to bear in mind, that in every instance where cerebral symptoms come on without obvious reason in early life, inquiry should be made as to the date of previous vaccination, and the arm should be examined for its evidence in the cicatrices left by its performance. A similarly stormy onset, however, is sometimes observed in cases of scarlet fever; and then it usually preludes an attack of a malignant kind, characterized by speedy loss of power, and tending to an early death. This occurrence, indeed, never very common, is most rare when scarlet fever is merely sporadic, but in epi-

demics of the disease it happens more frequently, and this even although the general characters of the disease are of a mild—not at all of a malignant—type.

“In the autumn of 1831 and during the early part of 1832,” says Dr. Von Ammon, “scarlatina prevailed epidemically at Dresden. The cases which at first presented themselves to my notice were, for the most part, mild in character, and ran a favorable course; but, at the same time, I met with some instances where death took place very rapidly and under peculiar symptoms of cerebral disturbance in children who, neither during life nor after death, showed the slightest trace of scarlatinoid eruption. At first I felt in doubt as to the cause and nature of the rapidly fatal head affections; for I did not any how connect them with scarlet fever, while the disease differed from inflammation of the brain in the extreme rapidity of its onset, in the fact that, notwithstanding the intensity of the head-ache, it was unaccompanied either by nausea or vomiting, that the bowels were not constipated, and that the pulse beat with such frequency that it was almost impossible to count it, while the attitude of the patient was not at all such as is usually assumed by any one suffering from acute cerebral inflammation.”

Dr. Von Ammon then goes on to say how a post-mortem examination of one of these cases led him to the suspicion which afterwards became a certainty in his mind, that these were really instances of scarlatina; that the impression of the poisoned blood upon the brain and spinal cord destroyed life before time had elapsed sufficient to allow of the ordinary manifestations of the disease. The possibility that the clue to the understanding of symptoms of formidable cerebral disorder is to be found in the approach of one of the eruptive fevers, enforces the necessity for learning in every case the history of a child's previous ailments, and renders it even more imperatively your duty to do so at a time when scarlatina is epidemically prevalent. Rapid too as is sometimes the advance of inflammation of the brain, its progress is commonly far slower than that of the cerebral symptoms which accompany the onset of the fever, while almost invariably some characteristic or other of the mere local inflammation would be absent, some anomaly would show itself such as excited the suspicion of the German physician, and ought to awaken yours.

But besides the instances just referred to, in which the temporary violence of the cerebral symptoms suggests the idea that active inflammation of the brain is present, there are others of less rarity, where, though the feelings of anxiety as to the real nature of the disease is less urgent, it is yet of

longer duration. Such are the cases in which, during the early stage of typhoid fever, the symptoms of cerebral disturbance so preponderate that for some days a doubt may be entertained as to whether the fever is sympathetic with disease of the brain, or the brain is disordered as a consequence of the fever. The question, in short, is between tubercular hydrocephalus and typhoid fever. Now something may be gathered from the age of the child, at least towards raising a presumption one way or the other, for the older the child is, the more likely is the disorder to be typhoid fever, the younger it is the more likely to be hydrocephalus; and I strongly recommend you in doubtful cases to put the issue between these two definite diseases, and not to indulge your indolence and put to sleep doubts which you feel unable to solve by talking to yourself or to your patient's friends of gastric fever, worm fever, and so on,—terms to which no definite import is attached either by yourselves or by others. There is not time to pass in review minutely all the diagnostic symptoms which mark typhoid fever, and serve, in spite even of much cerebral disturbance, to distinguish it from hydrocephalus. It may, however, suffice to remind you that vomiting is generally absent, is never obstinate, nor succeeded by long-continued nausea; that the bowels are often relaxed; never obstinately constipated, and that the evacuations are light-colored, fecal, but usually watery. Further, the abdomen is full, usually tender, and flatus is always to be felt in the intestines; the tongue is not often much coated, it is red at the tip and edges, and early shows a tendency to become dry. The skin is very hot, the heat is pungent, the pulse is frequent, and continues so throughout, but is never irregular nor intermittent. Even the very cerebral symptoms have their characteristic features; for the early occurrence of delirium, which is so general in typhoid fever, is another point wherein it differs from hydrocephalus, in which much pain of the head, much drowsiness, a marked change of temper and disposition, yet co-exist with a perfect intelligence.

"Surely," you may say, "these differences are marked enough; to dwell on them is superfluous, nay, wearisome: the help we want is in real diagnostic difficulties, not in cases so obvious, whose right interpretation is so easy."

Believe me, gentlemen, nine-tenths of the errors of diagnosis are made in easy cases, in cases whose features are sufficiently marked for recognition, if the observation had been trained to notice them, or the mind been disciplined to the inquiry in every instance: Why do I believe the disease to be this, why not that, or the other? The power of intuition and

the habit of guessing are two very different things, though sometimes mistaken for each other. The former is now and then the reward of years of patient observation; humility and diligence are its parents. The latter is engendered between indolence and self-conceit; he who takes up with it, whatever be his abilities, forfeits all chance of ever attaining the other; he adds not to his knowledge from being right, he gathers no lesson from being wrong: for him experience yields no fruit, age brings to him no wisdom."

There is a *second* class of cases in which the predominance of symptoms of cerebral disturbance sometimes masks the real nature of the disease, and such cases are met with among the acute inflammations of the thoracic viscera. Risk of being led astray would indeed be almost entirely avoided if you made it an invariable rule in all the acute ailments of early life to regard your examination as incomplete until after you had made a careful auscultation. The symptoms of disturbance of respiration are indeed often too marked to be overlooked; the cough, the pain in the chest, and the hurried breathing render mistake impossible; but it now and then happens at the commencement of pleurisy, and in pneumonia, especially of the upper lobes, that the nervous system sympathizes so deeply as to draw away the attention from those symptoms which, though obvious enough to him who seeks for them, do not stand out so prominently as to attract the first hasty glance. Pneumonia and pleurisy, especially the latter, occasionally set in with a convulsion; but you will, I trust, remember the caution which I have already given as to the sudden violence of cerebral symptoms, indicating that the brain is disturbed by some eccentric cause, rather than by mischief seated in that organ itself. Pleurisy, more particularly when affecting the right side, is sometimes ushered in by vomiting, and this vomiting seems all the more suspicious, if it has just preceded or just followed an attack of convulsions. It is accompanied by fever and by intense headache; the child cries aloud or screams much in its sleep, and if it is old enough for the symptom to be observed, delirium is not unlikely to be present. The cough may be but slight, or altogether absent, and even the pain not considerable, and it is then quite possible that the disturbed breathing may be put down to that sympathetic disorder of respiration, to which the name of "cerebral breathing" has been applied. Need I say that it is much harder to correct a diagnostic error into which one has fallen, than by care to avoid it in the first instance. If the case is one of pneumonia affecting the upper lobes, severe headache, drowsiness, great heat of head, though found, if carefully observed, not to be

greater than of the surface elsewhere, all serve to mislead. Delirium, too, is very often present if the child is old enough for that symptom to manifest itself; and the mind of the attendant fluctuates in such cases between the ideas of cerebral congestion, of hydrocephalus and of typhoid fever; one impression preponderating at one part of the day, another at a different one; but the true view of the case not presenting itself to the mind at all. In the case of pleurisy, even though the mistake is discovered late, the child will probably survive, and the distended side, the adaptation of posture, the subsidence of the fever and the disappearance of the head symptoms are tolerably sure to put the doctor, though tardily, on the right track. In pneumonia the error is even more serious, for the disease is more formidable, and the longer continuance of cerebral disturbance is likely to keep up the mistake. In its later stages, too, the convulsion and the coma, which sometimes come on as the results of the imperfect depuration of the blood, perpetuate the misapprehension, which, perhaps, a post-mortem examination alone brings to light.

Now, without going into minute detail, for which there is no leisure, I may observe that, in these cases, you will find something always wanting of those symptoms which characterize real cerebral disease. Perhaps, there has been a convulsion; but it was not followed by coma, nor by paralysis of either side. Vomiting has occurred, but it has soon subsided. The head is hot, but yet not hotter than the rest of the surface, and it is unaccompanied by violent pulsation of the carotids. The light may be unpleasant, but it is not shunned with that intense sensitiveness to its presence which closes the eyelids even in the darkened chamber. Again, though the breathing is sometimes hurried in cases of cerebral disease, yet here the hurry is constant; if the case is one of pneumonia it is extreme, and between the hurried breathing and the rapid pulse a constant proportion is observed, while, though the cough may be but slight, some cough is almost surely present. Such and such-like are the criterions by which, if you test the symptoms in these doubtful cases, you will run but small risk of not coming to a right conclusion.

Nearly forty years ago a French physician wrote an essay, the object of which was to illustrate what he termed the predominance of the digestive organs over the brain in childhood, and he appended to it the details of forty-eight cases in corroboration of his opinions. Now, although like all other books written to develop one idea, this is somewhat one-sided in its views, and, perhaps, a little overcharged in its statements, yet the main point is correct, namely, that—

The *third* class of cases in which symptoms of cerebral disease are provoked by disorders of the digestive organs is very numerous and very important.

A slight acquaintance even with the practice of medicine will have familiarized you with various symptoms of disturbance of the nervous system which derangements of the digestive organs and their appendages bring with them. Such are the unquiet sleep, the night-terrors, the grinding of the teeth, the sleeping with half closed eye-lids, the thumbs drawn more or less into the palm, which one often observes in infancy and early childhood, and some of which are seldom altogether absent during dentition, or when changes are first made in the diet of infants. But there are, besides, two distinct classes of symptoms to which disorders of the digestive organs, when severe, may give occasion—namely, convulsions on the one hand, and on the other, that form of cerebral disturbance characterized by mingled exhaustion and irritation, to which the name of the hydrocephaloid disease, or spurious hydrocephalus, has been given.

Convulsions from this cause are generally the result of unsuitable food, or of an over-full meal in infancy or early childhood; though other sources of irritation, as that of worms, or even of a calculus in the kidney, may produce them. Those which depend on indigestible food, are sometimes so severe as to threaten life, or even actually destroy it. They nearly proved fatal in the case of a little boy, five years old, previously healthy, who, on July 9, 1846, dined off some boiled salmon, of which the rest of the family partook more heartily than he, without any ill effects. At ten o'clock on the following morning, having slept well during the night, he was suddenly seized by a violent convulsion, in which his whole surface became exceedingly livid, and his lips of a deep purple hue. His respiration was greatly affected; he seemed as if he could not get air enough into his chest to keep him alive, and he appeared every moment as if he would be suffocated—while his pulse was feeble and frequent, and the temperature of his body low. Under the influence of the cold douche to his head, his breathing became less laborous, his lips regained much of their natural florid color, the convulsions greatly diminished, and the child began to make some half-conscious movements. It was now possible to give him an emetic, which caused free vomiting twice, and the rejection of some of the undigested salmon. The child was next placed in a hot mustard bath; while in it the convulsions completely ceased, after having lasted three hours and a half. He was now put in bed, where he slept quietly for four hours, and awoke quite well.

Now that which took place here you may observe not very rarely, and with symptoms of equal severity, in early infancy, when, perhaps, the error in diet has been so trivial that you can scarcely realize the possibility of its producing such formidable results. The fact, however, that in any given instance the convulsions depend on such a cause, may usually be gathered, partly from the history, which in early life is all the more important from the patient's inability to speak for himself, but still more from our observation of their characters. They are apt to be violent, accompanied with much spasm of the extremities, clenched hands, or the thumb drawn forcibly into the palm, and the great toe widely separated from the other toes. They are associated with spasm of the larynx, which often remains closed till suffocation seems impending, and with much trouble of the respiratory movements; in other words, with evidence of all the spinal system of nerves being in a state of great irritation. Almost always, too, the abdomen in such cases is distended, often extremely tympanitic, and there is frequent escape of flatus from the intestines. These peculiarities, if borne in mind, will often give you a clue to the meaning of a violent and apparently causeless convulsive attack. They indicate the source of the disturbance to be eccentric, and thus both guide your treatment, and influence your prognosis, enabling you to hold out the hope that if the child do but surmount its present danger, recovery will be complete as well as speedy.

I referred to a second class of symptoms dependent on disorder of the digestive organs; symptoms less formidable in appearance, perhaps, but more delusive, by which irritation and exhaustion together simulate the effects of inflammatory disease of the brain. It is in diarrhœa, and especially in relapses of diarrhœa, that these two conditions are associated in the greatest degree, and that the risk of error is, perhaps, most considerable.

One case in illustration of it must suffice, for time draws short.

A little girl was seized with diarrhœa on August 8, which at first was severe, but soon yielded to treatment, and she was again convalescent; when, on the 15th, vomiting and purging returned with great violence, and were attended with much febrile disturbance. On the following day she was still worse in all respects, but was not brought to me again until the 17th. She then looked exceedingly ill; her face was sallow, but with a flush on each cheek, and her eyes were deeply sunk. She lay in a half-dozing state, with her eyelids half closed, and the eyeballs turned upwards, so that nothing but the sclerótica was visible; but from this condition she awoke frequently and sud-

denly in a state of great alarm, and looking as if she were about to have a fit of convulsions. Her skin was hot, and very dry; her pulse very frequent, but not strong; and there was some subsultus of the tendons of the wrist. The abdomen was rather tympanitic; the tongue red, coated with white mucus; the thirst was great; the vomiting very frequent, and the bowels acted two or three times in an hour, the evacuations having the appearance of dirty water.

The persistence of the diarrhoea, and the great frequency of the action of the bowels, coupled with the fact that I had observed the case from the commencement, would have rendered error inexcusable. But such cases may come under our notice only when the evidence of cerebral disturbance is already very striking, and when, perhaps, the diarrhoea is no longer very urgent—perhaps may for a few hours have altogether ceased: in such circumstances error is very possible, and its consequences may be very disastrous. If you regard the cerebral symptoms as the signs of active disease, and withhold the Dover's powder, or the opiate enema, that might have checked the diarrhoea, and soothed the irritability, while you apply the cold lotions to the head, and give the child nothing more nutritious than barley-water in small quantities, because the irritability of the stomach, which results from weakness, seems to you the indication of disease of the brain,—the restlessness will before long alternate with coma, and the child will die either comatose, or in convulsions.

This is not, indeed, the only form which this spurious hydrocephalus assumes, although it is that in which the signs of irritation so mask those of exhaustion as to render the risk of mistake most serious; while the time during which the error can be rectified is in these cases very brief. In a larger number of instances this condition comes on much more slowly, since it results from the gradual influence of imperfect nutrition; and in these circumstances the signs of irritation of the nervous system which characterize its early stages are less marked, though not on that account less deceptive. In the infant brought up by hand, or imperfectly nourished at the breast, the first stage sometimes continues for weeks, attracting, perhaps, little notice; giving rise, indeed, to a vague suspicion that something is wrong, but yet this suspicion so indefinite that neither the parent nor the doctor pushes the inquiry far enough to decide what that something is; or, possibly, commencing dentition bears the blame of the whole set of symptoms. I would have you, too, bear in mind, that in these cases dentition may really have much to do with the production of the symptoms, though not exactly in the way which at first

suggests itself. The insufficient or unsuitable food heightens the irritability of the nervous system, and renders it preternaturally sensitive to the disturbance which teething seldom fails to bring with it. This disturbance acts, though more slowly, just as does that which accompanies diarrhoea; it exhausts the nervous power by all the manifestations of re-action which it produces, as the continued galvanic current wears out for a time the contractility of the muscles. The symptoms do not betoken real disease of the brain, though they closely resemble those which it occasions; so closely, indeed, that to read their import aright, you sometimes need go back for weeks, or even months, to gather the child's early history, and to learn how it has been fed, and how it has thriven from its birth. You will find, too, both in the past and in the present, intermingled with the general signs of cerebral disturbance, the evidences also of spinal irritation such as I have already referred to; and they should always lead you to suspect that the brain is disturbed in sympathy with some cause external to it. Irritability, restlessness, feverishness, a flushed face, a frequent pulse, undue sensitiveness of the surface, moaning, starting in sleep, all point to disorder of the nervous system, but they do not specially point to disease of the brain: their real meaning must be gathered from a consideration of the whole condition of the patient. That condition will be found to vary very much; the face will not be always flushed, nor the head always hot, nor the fontanelle always tense or pulsating. Vomiting may occur, but it will be occasional; the bowels will be relaxed rather than constipated; the abdomen not shrunken, but distended with flatus; a state which should always turn your attention from the brain itself to some source of irritation external to it; since, as the distinguished German physician, Goelis, has remarked, a collapsed state of the abdomen, and the absence of flatus from the intestines, are signs almost pathognomonic of hydrocephalus. Often, too, the carpopedal contractions and the laryngeal spasm are present, or have existed, to warn you as to the real nature of the case; while the pulse, though feeble and frequent, retains its regularity of force and rhythm, and thus differs remarkably from the irregular, intermittent, or unequal beats which are among the earliest and least fallacious signs of real cerebral disease. If misinterpreted, and consequently wrongly treated, the stage of exhaustion comes on by degrees, and with it a stealthy stupor. The flush no more returns to the surface, the extremities grow cold, the pulse becomes feebler, the pupils permanently dilated, the respiration sighing, the voice husky, deglutition difficult; symptoms which, if the earlier stage was misinterpreted, will probably be regarded as the signs of the

last stage of hydrocephalus; though the depressed fontanelle, the cool head, the pulse still frequent in spite of its feebleness, the abdomen still containing flatus, the bowels still loose, will tell at once a different tale to some other practitioner, who, with no larger experience than your own, yet with a mind unbiassed by a foregone conclusion, comes to the case, and at once reads its meaning aright.

I had wished to have said something about cases of a chronic character, in which symptoms occur that give rise to unfounded suspicion of disease of the brain, but there is to-day no time to do more than enumerate some of them. Such are the groundless suspicions which parents often entertain, and which the doctor himself is not always as quick as he might be to negative, in cases of essential paralysis in infancy and childhood. Such are the fears excited by the temporary though often long-continued dulling of the faculties, which often follows fever or some exhausting illness. Such are the apprehensions which fits of waywardness or altered temper excite; such, too on the other hand, is the dread which the excitability of a child whose faculties are just awaking to the wonders of the world around him, sometimes occasions his relatives; and such, lastly, is the morbid anxiety with which the severe neuralgic headache of childhood is watched by persons who can scarcely be persuaded but that suffering so intense, and the return of which medical care so often fails to prevent, must needs depend on a cause as serious as it obviously is difficult of removal.

You see, gentlemen, my catalogue is a long one, and I think not unimportant. I must hope, at some future time, to pass it in review, as I have to-day tried to do with the other class of cases of a more acute kind. Some of the details may, I fear, have seemed tedious; but my excuse is, that the errors against which I have tried to warn you are the same as in past years I have myself committed. I have not stated imaginary dangers. I have tried to warn you against such as have proved themselves to me very real ones, and to make you to the best of my powers the inheritors of my own experience.

II. *Lectures on Diphtherite in the College of Physicians and Surgeons of New York.* By Prof. ALONZO CLARKE.

WE now pass to an affection, which at present is exciting much discussion among the physicians of this city and elsewhere, I

refer to diptheria or diptherite. Brettonneau gave to it the name "*diptherite*," when his first memoir was published, many years ago, and by that name it has been known ever since. The older name seems to have been *malignant sore throat*, or *malignant angino*, or *membranous angina*; but the point most necessary for you to settle, is the one, which is much discussed now-a-days, viz: Is this a new affection, or has it existed from the time we have any history of medicine? It does not seem to me, from what I have seen of it, and from what I have read of the diseases of old times, to be a new disease. It seems to have been known for a very long time. It is claimed by Brettonneau (who is the best authority we have on the subject) that it is the disease known to the Greeks as the Egyptian disease, and that it never appeared in Greece until brought there by a colony of Egyptians. This he infers mainly from the description of what he supposes to be the same disease by a cotemporary of Galen, a Roman physician, and he maintains that this physician has described the disease in one page; he also asserts that it has been recognized from time to time all the way down to our day; that it swept through Italy and Spain, producing very great mortality in the early portion of the seventeenth century, and from that time until now it has appeared occasionally as an epidemic. The researches of such a man as Brettonneau are certainly worthy of consideration. One statement he makes, which is sufficiently curious, that is, that the Egyptian ointment, a substance used by the Greeks for the relief of this affection, has been lost for a considerable period, and finally received in these latter times as one of the most effectual things to break up the membrane; it is made of one of the salts of copper, and he asserts that its preparation is to be found in the French codex, and other French books relating to pharmacy. We do not have it in our books. It is claimed also that the great epidemic which occurred in New York, and described by Dr. Samuel Bard, was this very affection. There are, I suppose, very few physicians, who have arrived at the middle period of life, who have not, at some time or other seen this disease. But it has not fixed their attention as a *distinct form* of disease, and has been included under the general head of croup; and I suppose it is even now confounded with this latter disease. It has been known in all probability by various names; croup is a peculiarly favored term and has covered a great many cases; malignant sore throat has covered a great many more. Another question arises, and that is, is it in any way allied to scarlet fever? Scarlet fever has a sore throat, a malignant sore throat, a membranous sore throat, which is frequently enough fatal by the

formation of membrane, extending itself into the larynx and trachea. Is it not this form of scarlet fever? I had no occasion to ask that question after I had seen three or four cases of the disease. We know that persons, who have had this diphtheric inflammation, will have scarlet fever afterwards; again, children who have had scarlet fever will have diphtheria. *One* then does not protect against the *other*. Again, if it were a form of scarlet fever, we should expect to find it prevailing side by side with scarlet fever. Such is not generally the case, although, it is true, we have at this time an unusually large number of deaths from scarlet fever, while we have at the same time more of this diphtheria than I have ever seen before. It is not prevailing as a very dangerous epidemic, still there are many cases. I see, perhaps, a new case every week. Another interesting question arises: How is it communicated? Is it contagious? There is no question more difficult to answer than *that*, especially in regard to an epidemic disease, until it has been observed under a great variety of circumstances. That this diphtheria, or malignant sore throat is epidemic in its *tendency*, I think there can be no doubt; whether it is contagious or not is somewhat difficult to determine, because, where, in a certain house or family, one child shall be affected with the disease, and then a second, and then, a few days afterwards, a third, the difficulty is, they are all subject to the *same* hygienic and dietetic regulations and conditions; they are all exposed to the same influences, which affect them all in the same manner. This is one illustration of the difficulty we meet with in attempting to ascertain whether an epidemic disease is contagious or not. In cities it is not very easy to follow contagion. In the paper of the *Sydenham Society* there is strong evidence that this disease can be communicated from person to person, and this evidence is derived from cases which have been observed in the *country*; for it does not seem to be spread by atmospheric influences. Brettonneau goes so far as to say that it can be communicated in no other way, than from person to person, being in this respect similar to syphilis; and in the formation of a new nosology, this disease will have to stand side by side with the Egyptian disease, syphilis, the Neapolitan disease, etc. In this connection he relates some cases that are certainly very curious. This diphtheritic tendency is exhibited in other parts of the body than the throat. He relates one case in which a child, running about with bare feet, trod in the expectoration of a child sick with the disease, and asserts that the foot became the seat of diphtheritic inflammation, and he goes on to cite numerous instances to prove that the application of the expectorated material to an abraded

surface will produce the disease, in other words, that the disease is susceptible of inoculation. This statement, however, is not to be taken in all its length and breadth, even though Brettonneau, himself, has made it.

Now, with reference to the *nature* of the disease. It consists in an inflammation, the characteristic of which is the production of a thick, leathery membrane, upon all parts affected by it. Unlike croup, it does not confine itself to the breathing tubes, but the membrane passes over into the pharynx, passes upwards into the nose filling the nasal passages, and, unlike croup, if there has been an injury, or an abrasion of the tongue or cheek, patches of membrane will form thereon, at the seat of the injury. By European observers, it has also not unfrequently been seen upon parts where the epidermis has been removed by a blister, which extending in various directions often becomes a very formidable disease. The fatality of this disease does not alone consist in an obstruction to the tubes which are the seat of deposit; there is a *constitutional* element in it. Unlike croup, it is what physicians are in the habit of calling a *blood disease*. I do not know whether the blood is contaminated or not; but it certainly appears to be a disease of the *whole* system, for in many instances, where the membrane is entirely removed from the air passages, the child, though apparently beginning to get well, will suddenly sink and die. In many instances this disease comes on with violent chills. In one case, I remember that a young lady was seized with these chills while in church; they became so violent that she was obliged to go home, and shortly afterwards had sore throat. In this respect it has some resemblance to the epidemic erysipelas. The *fever* attending the disease is often very high and in some cases we have *vomiting* at the very onset of the disease. This is not the mode, however, in which they all come on. A great many cases come on very insidiously after the manner of some cases of croup, and often much more slowly than croup. I saw a physician attacked by the disease, who, evidently, had contracted it while driving about among his patients. He was seized first with a cold chill, which was soon followed by a flushed face, then another chill, then another fever, and then a third chill with a recurrence of the fever. On seeing him, I asked, "what is the matter?" "I really don't know," said he, in a thick, husky voice, indicating some enlargement of the tonsils, and this led me to examine his throat, and there I saw a patch of this exudation, about as large as a new penny, nearly circular, and surrounded by an ugly looking dark line, the nature of which could not be mistaken. He very soon got well. Do not understand me

now as describing the *general* mode of the invasion of the disease, I merely select these cases for the sake of illustrating the *various* and peculiar modes in which it makes its attack.

I was describing to you yesterday the mode of invasion of diphtheria. I gave you a particular mode of invasion, for the purpose of illustrating the important fact that the disease is not a *local* one in its character. For although the disease has a local manifestation, yet it appears only in certain conditions of the system. How it first affects the system we cannot say. Were it proven that the disease can be communicated by inoculation, we should say the contamination affects the *whole system first*; and afterwards produces its local manifestation at the point where the inoculation took place, in the same manner as syphilitic disease. Now with regard to the *symptoms* of the disease more particularly, I have seen about twenty cases of this disease, and I suppose in these twenty, so far as I can judge from the accounts of the disease, as it occurred elsewhere, I have seen about all the modes of invasion peculiar to this affection. They may be divided under two heads. Those in which the *constitutional symptoms* are active in the beginning, and those in which the disease makes its invasion *very insidiously*, and only becomes manifest by the appearance of a patch of exudation upon one or other of the tonsils or in the fauces. In this latter class of cases the children do not complain of much ill health, yet it is apparent that they do not feel exactly well, and have as a rule not much disposition to play.

In some cases you find the patient in bed, amusing itself with its playthings, and the mother being afraid that something was about to happen, has sent for the doctor. When you speak to the child, it answers you in a confident, full voice, perhaps a little hoarse. You will learn from the mother that the little one has had some cough. On examining the throat on the *outside*, you find it a little swollen; the glands on the outside are a little swollen. You get a spoon, depress the tongue, and looking into the fauces you will very likely see a little patch of membranous exudation, about as big as a dime, a whitish membrane lying upon one of the tonsils surrounded by a lively injection, sometimes surrounded by a pretty deep *venous* injection, or at least a venous color. *Then you have the diagnosis.* If this patch of the peculiar membrane of this disease remains, there is danger that it will gradually spread and produce very serious consequences. I saw a child just in this condition about two weeks ago. You would hardly have supposed that there was any need of apprehending danger. The pulse was not very rapid, perhaps about 100, the countenance fresh, the child only appearing a little paler than usual.

The tongue was not particularly covered with any coating, nor yet dry. While the attending physician and myself were talking over the case in an adjoining room, I noticed the child tipping over its head, to look and see who those people in the parlor were. I state this little circumstance to show you that the child evidently did not feel very sick. We examined the throat and found one of these patches, on one of the tonsils and extending over the uvula; both tonsils were swollen and red. Almost any one would have said this child will get well, there is nothing to be alarmed about,—but the doctor was alarmed; he told the parents, that he feared the child would not recover. The voice was not yet much altered, there was just enough of hoarseness to show that the inflammatory action was passing down into the trachea, although there was no membrane in the larynx as yet; but from the tendency of this thing to *advance*, it seemed to me that it would push its way into the trachea and larynx, and destroy the child. I never saw the child again. Eight days afterwards, however, I saw its name in the newspaper in the catalogue of deaths. I have not seen the doctor, and do not know how the child died; I suppose in the usual way, from extension of the membrane.

That the disease is a *constitutional* one, I think you will see from such a case as the following: The case is that of a girl, 8 years of age, who while in apparent good health, was attacked on the 3d of January with what appeared to be an ordinary sore throat. Yet there was enough change in the general appearance of the patient, to induce the parents to call in a physician. The physician discovered upon one of the tonsils a portion of this membrane; he combatted the disease as well as he could by local applications and general remedies. In six days the membrane had entirely disappeared, leaving the tonsils still swollen and red. On that day, however, this little one began to have *vomiting*, and in short the peculiar form of ill health that indicates the approach of *scarlet fever*. The scarlet fever ran its course regularly. The tonsils in the meanwhile, although very much swollen and disposed to ulcerate, *were not at any time the seat of membranous exudation*, they were *entirely free from membrane during the whole course of the scarlet fever*. When scarcely convalescent from scarlet fever, it was seized with *catarrhal* symptoms, such as usually precede the eruption of *measles*, and in a couple of days it had the measles eruption all over the upper part of the body. On Friday of last week, the eruption of measles had entirely disappeared from the body, and *now the throat began to be sore again*, and on Saturday morning the *membrane* once more made its appearance; this must have been some 18 days from

the beginning of the disease. This membrane has resisted all applications that have been made to it, it is now extending forwards into the fauces, and backwards into the œsophagus, and apparently downwards into the breathing tubes. The child will in all probability die. On looking over this case we cannot fail being impressed with the idea that there is a *constitutional element* in this disease. Here we see the disease, as it were, jumping over two of the most formidable affections of childhood, the *constitutional element* still remaining, and as soon as these two diseases had passed away, this *constitutional* disease, diphtheria, again made its appearance in its own peculiar form, producing its own peculiar results. These cases taken together will suffice to show you the mode in which this disease makes its invasion.

Now, a word or two with regard to the *character* of the *membrane*. I have had several opportunities to examine this membrane; here are some specimens coughed up by a young person, some 14 years of age. This membrane you will observe differs somewhat from that formed in ordinary croup. The membrane of croup is not usually formed so *thick* as that, neither does it possess that coraceous or leathery character. Both membranes are formed in about the same way, and although the constitution of the two is not exactly similar, still there is nothing in the diphtheritic membrane that will enable you to positively determine its character under the microscope. These membranes are formed in the same manner as are all false membranes, *namely*, by a coagulation of the plastic portion of the blood forming threads or filaments, without the intervention of cells. It is a fibrillation of fibrine. In this respect it does not differ from the membranes formed during the progress of what are called *healthy* inflammations, such as pleurisy, pericarditis, etc., with this exception, in *this* tissue there is a variable quantity of *granules*; but no *cells* belong to it properly. If there are any cells, they have come from the membrane on which it has been formed. These granules have in some parts of the membrane a *linear* course, in still certain other parts the granules seem to have no definite arrangement, but are held together by a certain matrix, thus forming a strong membrane. Some of these granules under the microscope appear to be *fatty*; sometimes the granules are definitely arranged in fibres; at other times there are no fibres at all, the granules being all mixed up together. The same membrane will frequently enough show these two characteristics as distinctly as would two different specimens. The difference between this membrane and that of croup, consists in the firm coraceous character of the former, and its more certain constitution by fibres, its greater

abundance of granules, and in the absence of *formative cells* to be converted into fibre. The membrane of diphtheria is, properly speaking, formed by the fibrillation of fibrine, whereas that of croup is formed first by the production of cells, and the subsequent transformation of these cells into fibres. In the diphtheritic membrane, that transformation process is not observed. The fibres are formed directly in the beginning, out of the exudation. The attachment of this membrane to the parts on which it is produced is very much like that of ordinary croup, it is perhaps a little firmer, its tissue being firmer. The disposition of this membrane to *re-form* is very remarkable, and is, perhaps, one of the most prominent characteristics of this tissue. The membrane of croup is sometimes renewed, but not so often as is the diphtheritic membrane. This membrane like that of croup is prone to extend itself down the trachea, even to the last division of the bronchial tubes. Sometimes it takes its course down the pharynx and the œsophagus into the stomach. There is still another form of this disease, denominated by European writers as "cutaneous diphtheria," which forms upon any abraded surface, more especially that produced by a blister, which is recognized by the occurrence of this same coracious membrane upon the naked surface. From the point affected, an ugly inflammation extends itself in various directions, and if there is a scratch, wound, ulcer, in the neighborhood, it is likely to become covered with the exudation; although it is not likely when this "cutaneous diphtheria" occurs, that you will find a membrane in the throat; hence cutaneous diphtheria is described separately from the *mucous* diphtheria. In some cases of mucous diphtheria the membrane is formed in the vagina. I am not aware that it has been found in the rectum, although I see no reason why it should not occur there; at least I can not call any case to my mind where it has been found. The most *dangerous* locality for the formation of this membrane is certainly the *throat*. It is generally regarded as *least* dangerous when it occurs on the *skin*, it being when it forms here, far more amenable to treatment, though not unfrequently fatal through constitutional influences. If the membrane, when forming in the *throat*, does not invade the *larynx*, the chances for recovery are far greater; unfortunately the *larynx* is very rarely spared, and the patient dies with symptoms of suffocation, resembling those of croup. A certain portion of the children affected with this disease, do not have any membranous formation in the trachea; *these* are the *hopeful cases*, although it is true that the *tendency* of the disease lingers sometimes even after the membranes have disappeared. Dr. Macready had such a case some time ago. In this instance,

after some days of treatment, the coracious membrane was discharged, after which the child seemed to be doing very well indeed; all the membrane had disappeared from the throat, and there was no symptoms of its re-formation; there was nothing to induce the conviction that there would be any obstruction of the passages, the breathing being easy and natural, the throat clear of all membranous material. The child was then somewhat weak, but still strong enough to take a ride out. One day, however, it sank suddenly into a state of collapse, without any known cause, and shortly afterwards died. I had just such a case as this myself, where, after the membrane was discharged, the patient seemed to be doing remarkably well; he was well enough to sit up in his chair, although too weak to go about. So far every thing was promising; but suddenly, one day, he was seized with a fainting fit, the pulse became more and more rapid and weak, his face became very pale, looking exactly as if some internal hemorrhage had taken place, and in this condition he died. You will notice then that this disease has a sequel. There is a constitutional element in it that does not alone manifest itself in the throat. Nor can we regard it as a trifling affection. It is true that it is not so fatal as membranous croup, because there are a considerable number of cases in which the membrane does not extend itself down into the breathing tubes.

1st. That inasmuch as diphtheria is a *manifestly constitutional* disease, so must our main reliance be placed on *constitutional treatment*.

2d. As the disease is of an *Asthenic* type, the remedies employed must be such as will give tone to the system. The best of these are the fluid preparations of iron, quinine, etc., together with an invigorating diet, and the occasional use of stimulants.

3d. The administration of mercury with a view of obtaining its *constitutional* effects, is a doubtful expedient, but the application of *dry calomel* to the ulcerations of the throat is of decided benefit.

4th. The application of the nitrate of silver to the *membrane itself* is of no special service, whereas if applied to the parts immediately around the membrane, it tends to prevent its further extension.

5th. The administration of chloride of potash, both in the form of a gargle, and as an internal remedy, though not as was claimed, a specific in this disease, is still of some benefit, and should, therefore, form a part of our treatment.

ORIGINAL LECTURES.

I.—*Lecture on Diuretic Remedies.* Delivered at the University of Maryland, February 16, 1860. By CHARLES FRICK, M. D., Prof. Materia Medica and Therapeutics. (Published by the Class.)

I PROPOSE to day, gentlemen, to speak to you of a class of medicines, a proper understanding of which, at the present time, is one of the most important points bearing upon the relation of therapeutics to pathology. I mean diuretics, or those remedies which promote the secretion of urine. And I approach the subject with some diffidence, partly because its correct appreciation is a matter of the extremest importance to your knowledge of medicine, inasmuch as, with few exceptions, it has not at all received the consideration it demands; and partly because the facts in reference to it are stated so loosely, are oftentimes the result of such badly conducted experimentation, and are so often the conclusions arrived at by false and vicious theorizing, that they are too apt to be utterly valueless. In the present lecture, I shall endeavor to set before you, to the best of my ability, the true relation that this class of remedies bears to disease, how you are to estimate their value, and what conditions of the kidneys modify or favor their employment.

In all works on therapeutics, diuretics are defined to be medicines which promote the secretion of urine. This definition is correct, but, unfortunately to many minds, an increased secretion of urine implies merely an increased amount of urine; that is, the urine, which formerly amounted to but a pint in the twenty-four hours, has become increased during the administration of certain remedies to a quart. Now, this may be in reality an increase, that is, the additional pint may bear with it an increased amount of solid matter. But it does not follow that such will be the case. The extra quantity may consist of water merely; and this water be occasioned simply by an additional amount of fluid taken into the stomach; or because the skin is exhaling a less quantity of its peculiar secretion than previously. In either case, the absolute loss or drainage from the body is not increased, and the diuretic effect is more apparent than real.

But, I think, I can explain this more satisfactorily by occupying your time, for a brief period, with some general remarks in reference to the physiology of the kidneys. You will be told, elsewhere, that life consists of constant change, that from the commencement of infancy to the extremes of old age, there is the constant addition of new material to the body, and the subtraction and elimination of that which is worn out, and which has fulfilled its purpose in the animal economy. You will learn that these changes vary under innumerable circumstances, but that no muscular movement, or thought, or action, takes place that is not accompanied with some alteration in the particular organ or structure brought into activity. That, through the lungs, the oxygen of the air is brought into contact with the blood, which, in turn, circulating throughout the whole body, effects certain changes; reparative on the one hand, and, on the other, absorbing into itself those elements which are destined for elimination. These it presents to the proper organs,—the carbon in the form of carbonic acid to the lungs, the bile to the liver, certain other excretory elements to the skin, and the urine to the kidneys.

The kidneys then are eliminating organs. Let us look a little more clearly into their peculiar function. The urine, we find, consists of three separate elements; in the first place, inorganic substances; secondly, organic substances; and thirdly, water. The first, the inorganic, are derived partly from the metamorphosis or disintegration of tissues, and partly from the food; so also with the organic elements, as the urea, uric acid, &c.; while the amount of water, in which these are dissolved, is due simply to the quantity of fluid presented to the kidneys by the blood. And inasmuch as one of the important offices these organs fulfill is to preserve the amount of fluid in the blood in proper proportion to the wants of the economy, and at the same time to be a counterbalance to the perspiratory function; it will be found that the amount contained in the urinary secretion will be greatly influenced by the quantity of water taken into the system, and by the condition of the cutaneous exhalation. In other words, the quantity of urine passed is no test, by itself, of the increased or diminished function of the kidneys.

The result of numerous and accurate experiments demonstrates that a healthy individual passes from these organs from 6 to 800 grains of solid material in the twenty-four hours, it may be, for all practical purposes, assumed to be 700 grains. Now this material represents two separate things. First, the elements of the worn out tissues; and, secondly, those substances which, although absorbed by the blood, subserve none

of the purposes of nutrition, and therefore seek an outlet by the kidneys. And the 700 grains, which is the daily and healthy average of this material, may be dissolved either in one pint or two quarts of water. In the latter case, the amount of urine will be four times as large as in the other. But inasmuch as the water is dependent in great measure upon the action of the skin and the amount of fluid taken as drink, and the solid materials are the representative of the manner in which the chief function of the kidneys is performed, it follows that in both the instances I have supposed, although in the one case the quantity of urine quadruples the other, the organs are performing their duty in exactly the same manner. How, then, you will be naturally led to inquire, are you to estimate whether the function of the kidneys is increased, if not by the amount of urine passed? I answer, by ascertaining its specific gravity, by finding out how much solid matter each fluid ounce contains. This is effected in various ways. For all practical and clinical purposes the specific gravity measure is sufficiently accurate, although, so far as mathematical exactitude is concerned, it records, on the average, an error of at least five to seven per cent., and the process is simple enough. Seventy ounces of urine, with a specific gravity of 1.010, indicates that 700 grains of solid material are contained in it, and thirty-five ounces, with a specific gravity of 1.020, records the same fact. In both instances the same amount is in reality secreted, although the quantity of urine in the one case is double that of the other, because the urinometer shows that the specific gravity of the two occupies exactly the reverse proportion. This, it is true, is but a rough way of ascertaining the result, but it is sufficiently accurate for most purposes. If you desire greater exactitude, tables are prepared in all the works on this subject, which may be readily consulted.

So far, then, you are to understand this fact, that in estimating the degree to which the kidneys are performing their duty, you cannot assume, because a patient passes forty ounces one day, who the day previously voided only twenty, that the function of these organs is increased, unless you ascertain at the same time that the augmented quantity of fluid holds in solution a proportionate increase of solid matter. And you will understand, from the reasons I have just advanced, why it is that so many inert substances, given in a large amount of fluid, have had erroneously attributed to them diuretic properties.

There is scarcely a medicinal spring in the world that is not so considered, and although, unquestionably many of them do possess these virtues, yet you can easily imagine that one or

two pints of any water taken before breakfast upon an empty stomach, whether medicinal or otherwise, if it does not find its exit by the skin, or pass off by the bowels, must filter out through the kidneys; one of their physiological purposes being, as I told you, to keep the amount of water in the blood in a proper proportion. So also with lager beer, so extensively patronized, and which, by many physicians, has decided diuretic properties attributed to it, and the innumerable cold infusions of vegetable substances, all of which are administered with the same view; the fluid in which the barley and hops are infused in the first instance, or the inert vegetable in the other, passes off through the kidneys, with little or no real effect, so far as the solid contents are concerned. I say little or no effect; for although the principal result occasioned by the fluids I have mentioned is to increase the quantity of water, yet the mere transit of a certain amount of water from the blood to the kidneys, and hence to the bladder, necessarily carries with it a small amount of solids—and in this sense pure water may be considered a diuretic; yet this increased amount is very trivial, and not at all what it is usually supposed to be. Looking at the fact in this light, we must consider the copious imbibition of all medicated fluids, whether derived from natural springs or vegetable infusions, to a certain extent diuretic. But they are not more so than pure water would be, nor do they exert in this respect any greater degree of remedial influence. What, then, is the therapeutic advantage to be derived from the copious imbibition of simple cold infusions or of cold water, so far as the kidneys are concerned? It is this: it helps to remove certain noxious principles from the blood in febrile diseases, in virtue of its diluent properties; it places the kidneys in a better condition for elimination by diluting the urine, and thus preventing irritation of these organs by a too concentrated secretion; and in all cases of irritation or inflammation of the urinary passages, on the same principle, it obviates in a measure one of the causes which tend to keep up this condition.

But you are not to understand me, gentlemen, as intending to convey to you the idea, that the amount of water secreted by the kidneys, is of little or no importance, and that the solid elements only are subjects of therapeutic consideration. In my remarks thus far, I desire to impress upon you the fact, that if the skin acts less freely, the kidneys will secrete the more fluid; and that if a pint or a quart of pure water or an inert effusion is taken, the additional amount of urine secreted must not be considered a diuretic effect. Both are simple physiological occurrences, and have no further therapeutic value than what I have just stated.

But, on the other hand, there are certain substances, which, when taken into the economy, seek their outlet through the kidneys, and in so doing, stimulate these organs into increased activity, the increase being both of water and solids, such, for instance, as squill, juniper, cantharides, and turpentine; and in their application to disease, the water is the element of most importance. In dropsies, for example, we desire the absorption of the effused fluid, and this to be accomplished either by increasing the secretion from the skin, the kidneys or the alimentary canal. Certain rules, which will guide us in the selection of one or the other of these, I shall detail presently. But when, for some particular reason, the kidneys are selected, and by the administration of one of these agents, the amount of water is increased, not because the cutaneous transpiration is lessened, or more fluid is taken into the stomach, but because their function is in reality augmented; it follows, that as the blood is drained of its fluid, a portion of that constituting the dropsy, must be re-absorbed to restore the equilibrium. It is in dropsy that diuretics have been principally employed; and hence it is, that the mistake has arisen, of supposing that an increased quantity of urine always evidences a diuretic effect, and of overlooking the importance of separating the solid and fluid elements from each other in the treatment of all other diseased conditions.

Until within a few years past, no class of remedies were considered so uncertain and so capricious in their action as diuretics; and such is even the case, though to a less degree, at the present time. Among those in most common employment are the salines, mercury and digitalis, oftentimes given indiscriminately, and still oftener combined together in the vague hope that if one failed to operate, the other might succeed. The mode of action of these substances is at this time better understood, and I shall endeavor to explain the principles upon which their operation is founded. And first, of Salines.

At the very commencement of this course of lectures, I stated to you, that the absorption of medicines was partly explicable on the principle first pointed out by Dutrochet, of endosmosis and exosmosis; and in speaking of saline cathartics, I adduced the same explanation in regard to their hydragogue action. Their operation on the kidneys is also referable to a similar law. Let me in a few words describe this phenomenon. Suppose a glass tube, open at both extremities, have a piece of animal membrane, the bladder, for example, tied firmly over one end; suppose also, this tube be partly filled with syrup, and immersed in a glass of distilled water. In a short time

the fluid will rise in the tube, the water having permeated the membrane and diluted the syrup; this is an example of imbibition or endosmosis. Empty the tube, partly fill it with water, and immerse it in syrup, the fluid will now fall in the tube, exuding through the membrane and diluting the syrup in the external vessel, by exosmosis. As a general law, so far as living tissue is concerned, it is sufficient to state, that when two different fluids, capable of mixing, are separated by an animal membrane, the fluid lowest in specific gravity, will permeate the membrane, to dilute the denser fluid. In dead animal membrane, whilst imbibition goes on, a certain amount of exudation also occurs, though to a much smaller extent, and vice versa; whether this also occurs in living tissue, that is, whether endosmosis and exosmosis both take place at one time, there are no facts which will enable us to decide, but the probability is, that they do.

The alimentary canal and the blood-vessels may be considered as separated by such a membrane; both contain a certain amount of fluid, and if to the first a saline solution be added, its density or specific gravity must determine, whether it shall be absorbed or otherwise. If the saline substances are intended to be absorbed, and ultimately to reach the kidneys, it is necessary that the density of their solutions should be much below 1.028, which is the specific gravity of the serum of the blood; indeed, experience has shown that the proportion of solids, dissolved in the aqueous vehicles prescribed, should be less than five per cent. Thus a tolerably strong solution of the tartrate or acetate of potass, or of sulphate of magnesia, will altogether escape the absorbents; indeed, so far from being imbibed by the capillaries, it will actually excite an exudation of water from these vessels in the stomach and intestines, thus becoming diluted by exosmosis and exciting purgation, while a sensation of thirst is excited, on account of which the patient is compelled to drink, for the purpose of supplying the water removed from the blood by exudation. We can thus understand why half an ounce of acetate or of tartrate of potass will purge, and a scruple of either excite diuresis. This phenomenon clearly explains the rationale of the diuretic or non-diuretic action of salines in most cases: and if we hope to arrive at any certainty in their effects, must always be borne in mind. I say, in most cases, for it to occur invariably, certain conditions are necessary, which do not always exist. Were the coats of the blood vessels and intestinal canal always in the same condition, the quality of the blood at one uniform standard, and the bowels always empty, there would be no difficulty in regulating exactly a diuretic or cathartic action,

and producing always a fixed and definite amount of fluid discharge. But these conditions are not uniform, all three undergo certain variations, and occasionally produce opposite results from those we desire to attain. Thus the salt given in such a state of concentration as should provoke a discharge of serum to dilute it, and, as a consequence, purgation, may encounter so large a quantity of fluid in the bowels that it becomes of less density than the serum, it therefore enters the blood, and is passed off by the kidneys. Or, again, the coat of the bowels may, under certain conditions, become exceedingly irritated by even a dilute saline solution, so that, instead of being absorbed, it occasions congestion of the mucous surface, and subsequent serous effusion, with purgation; or, on the other hand, a very strong solution may irritate so highly, as to impair the function of the membrane, so that no secretion takes place, and consequently no purgation. It is true also, that some influence is to be attributed to a direct stimulant effect exerted by the saline upon the capillaries of the gastro-intestinal membrane, and we must remember, that if a large amount of a dilute saline mixture be taken into the stomach, such for example as some of the natural spring waters, a certain amount is absorbed into the blood till the fluid is filled to repletion, and the remainder then acts as a purgative by distension merely. These are some of the circumstances that modify the action of these agents, but the general law remains unharmed, and must, as I said, be taken into consideration in their administration. But, more than this, the proper employment of these salines may even be a matter of grave import. If, for example, a patient is suffering from active congestion of the kidneys, evidenced by scanty urine, containing blood and serum, and we desire to produce purgation by means of one of the salines, it is of every importance that the solution be sufficiently concentrated. For if very dilute, on the principle I have been discussing, it will most likely enter the blood, and seek an outlet by the kidneys, thereby aggravating the existing disease, and convert, perhaps, by its irritant operation, simple congestion into active inflammation.

But, you will ask, what are the immediate effects of these salines on the composition of the urine, and in what special manner is the function of the kidneys affected? In the first place, in passing out with the blood they carry with them a certain amount of water; and the urine is increased by this water, and by the salines also. But more than this is occasioned. No class of medicines are more powerful as alteratives, producing their effects by hastening the metamorphosis or destruction of tissue, than the alkaline salts. These effete

materials are also taken from the blood, and pass out with the rest in the urine. Thus this secretion, under the use of alkaline salts, becomes increased both as to its amount of water, and the solids it holds in solution. The first derived from the blood, passing out with the medicine, while the latter is composed of the medicine itself, and the effete elements which are produced in its passage through the system. But I desire you to bear this in mind, the diuretic effect, in this case, is almost altogether secondary. The urinary elements are not increased, because the kidneys are stimulated to increased action; but, inasmuch as one of their functions is to remove from the blood useless and worn out material, they merely, in accordance with this law, abstract the additional amount that the operation of the alkaline salt has occasioned in its transit through the body. Their diuretic effect then is indirect, and not primary, and I am particular in making this distinction, because many of the so-called diuretics are equally secondary in their operation. Increased muscular exertion produces increased waste, and an increased amount of material is as a consequence presented to the kidneys for removal; and if we are to consider all substances as diuretics which provide additional material for the kidneys to eliminate, and consequently produce an increase in the urinary secretion, most alteratives must be so classified, and exercise must be included under the same head.

Among the salines, the most important, in all probability, is the bi-carbonate of potash. Allow me to explain some of the more important points of its operation.

You have learned that when the acetate of potash is administered internally, it does not enter the circulation as an acetate, but becomes changed and is absorbed as a carbonate, so that in reality, so far as the ultimate effects of the two salts are concerned, it is a matter of little importance whether the acetate or the carbonate be administered. But, upon the stomach, the action is different; the acetate produces more irritation than the other, and the bi-carbonate is consequently the preferable agent, whenever it is thought advisable to administer the remedy in large quantities, or for any length of time. And herein lies the efficacy of this salt in rheumatism; not so much for the diuretic action it occasions, as for the waste and alteration it produces on the tissues at large, and, among the rest, those involved in the rheumatic disease.

You are aware that the fibrine of the blood, the coagulable element, undergoes various changes in disease, both as regards quantity and quality. So far as its quantity is concerned, a vast increase is noted in inflammatory and certain other morbid

conditions, among them rheumatism, in which the absolute amount becomes tripled and even quadrupled above its usual healthy standard. I must tell you, also, that there is a difference of opinion among pathologists as to whether this increase of fibrine is indicative of a greater or less degree of vitality in the blood; that is, whether an augmentation of fibrine from three parts in the thousand, its normal amount, to twelve parts, is due to an increase of formative power, or that it rather evidences an accumulation of effete material in the blood. This question, at the present time, it is hard to decide, but as far as I am able to judge, I hold that this increase is rather the result of retrograde than of formative changes. There are others, however, who maintain a different view, and think the large amount of this fibrine in the blood, which as I just said, is one of the characteristics of acute rheumatism, is the cause of many of the phenomena of the disease; and as the alkaline salts have the property to a very great degree, when given in large and continuous doses, of destroying the plasticity of the blood, and diminishing the quantity of fibrine it contains, would assume that the benefit derived from these remedies is due to this fact. This may be so, but whether correct or otherwise, I am satisfied that all the good effect exerted is not in this mode. Not only do the alkalies lessen the fibrine, but like mercury they increase the waste of tissue, as well as of the elements of the blood itself—and when disease is present, the morbid principles that this fluid contains. It is in this way principally that the bi-carbonate of potash proves beneficial in rheumatism, and is preferable as you have seen, to both the carbonate and acetate, as it is less irritating; and to mercury, because it is more manageable. But in the treatment of this disease it is necessary that it should be administered in large doses, at least 30 to 60 grains every two or three hours, if the stomach will bear it. It is of course inapplicable to cases of rheumatism occurring in debilitated and ill-nourished individuals; and is, therefore, not a specific for it, as many of its advocates would seem to imply. It will be noted, also, that under its use, when it acts favorably, the quantity of urine becomes increased, and there is also an additional amount of solid material contained in it. It is, therefore, in one sense a diuretic, but I beg you to recollect what I have stated more than once, that this increase is not so much owing to stimulation and increased function on the part of the kidneys, as because the remedy has produced additional waste, and has, therefore, provided more material for these organs to excrete.

In this same connection I would allude to the popular idea that asparagus and water melons are diuretic, neither of which

have any effect beyond in the first instance impregnating the urine with its odoriferous principle, and in the other of passing off the large quantity of water, which is contained in the bland fluid of the fruit. Many other substances beside *asparagus* afford to the urine a peculiar odor, among them turpentine, but this latter you have seen doses in reality increase the function of the kidneys, and promote an increased secretion.

It has been taught, also, that a diuretic action is sometimes occasioned by sympathy, and that certain substances act on these eliminating organs through the medium of the nervous centres. It has been stated that a medicine admitted into the stomach, may produce a certain impression on the mucous coat, which will be transmitted to the sympathetic or spinal centres, and from them to the kidneys, which will be excited to an increased performance of their function. But this assumption is purely gratuitous, and there is no single fact which will support it. The application of cold to the skin, it is alleged, acts in this way. For example, it is said more urine is passed in winter than in summer, and the exposure of the body to the cold air, or walking barefoot over a cold floor, will often in a short time be followed by a flow of urine. But why need we suppose that nervous sympathy occasions this result, when it can be explained more satisfactorily and more rationally by the kidneys passing off the water which the skin is suddenly prevented from doing. The perspiration and pulmonary exhalation through the vaporization of the liquid eliminated from the blood vessels of the skin and bronchial membrane, are a never ceasing cause of the reduction of temperature. But this is not now needed, owing to the direct application of cold; which at the same time has a tendency to check this exhalation. Consequent therefore upon the suspension of these two functions, there is an accumulation of fluid in the circulation; and as the function of the kidneys is in part to regulate the amount of water in the blood, they abstract it, and hence there is observed an increased discharge of urine. Such at least is the view I hold of the rationale of the operation of cold in augmenting the urinary secretion.

In many works on therapeutics, you will find it stated that *strychnia* and *assafœtida* increase the function of the kidneys. But here again the effect is secondary and indirect only.

For the necessary performance of any of the vital functions, one of the first requisites is that it should be supplied with a proper amount of nervous energy. A want of this oftentimes is the sole cause of imperfect secretion on the part of the stomach, the liver, and the intestinal canal; and so also do the kidneys sometimes fail in their function, and as a consequence

there is a retention of morbid materials in the blood. Strychnia, by stimulating the spinal cord into increased activity, stimulates equally the nerves which proceed from it, and among the rest those supplied to the kidneys. Hence, these organs again resume their normal action, and there is discharged, not only the daily and healthy waste, but that which has accumulated in consequence of their inactivity. A similar phenomenon is observed in hysteria. Without entering into an explanation of the pathology of this affection, it is sufficient to know that during the paroxysm and preceding it, there is an irregular distribution of nervous energy to the various organs. Hence there is impaired function, and the kidneys as well as the other secreting organs fail in the performance of their duty. From this there results accumulated material in the blood, which is discharged as the paroxysm passes off, and equalization of nervous distribution takes place, and I have no doubt that a portion of the good effects observed from assafoetida in these cases, is the influence that its stimulant operation upon the nervous system exercises, in regulating and affording a due supply to the kidneys, and thus enabling them to remove those retained elements from the circulation which tended to keep up the hysteric attack.

After the use of both these medicinal substances, then diuresis takes place under certain circumstances. But they cannot be called diuretics, inasmuch as the liver is affected in similar way; and both organs are brought into increased activity, not from the direct effect of the medicines, but in consequence of their operation on the nervous system generally.

The condition of the blood vessels is also an important consideration in reference to diuretic agents. As the kidneys derive their secretion altogether from the blood, a certain amount of vascularity is of course the normal condition. And all medicines which act directly in increasing the quantity of urine, do so by stimulating these organs, and consequently producing an increased access of blood to them. But this access must be bounded within well defined limits, for if it pass beyond a certain point, the increased vascularity impedes and prevents secretion, rather than assists it, and this brings us to the recognition of two important points: first, that blood letting may promote diuresis, and secondly, that any agent whose immediate effect is to stimulate the kidneys into increased action, may, if injudiciously employed, have exactly the opposite effect.

Let me illustrate these assertions by examples. Turpentine or cantharides, when given in small quantities, become absorbed, enter the blood, and pass out by the kidneys. In their transit,

the volatile oil of the one, and the irritant principle of the other, stimulate the urinary surfaces, from the pelvis of the kidneys to the mucous membrane of the bladder, provoking an increased secretion from the various tissues and organs it is brought into contact with. Hence, there is an augmented secretion of urine, and the remedies become, under certain circumstances, valuable medicinal agents. But suppose the dose of the cantharides or of turpentine be very much increased, there results then still greater vascularity of the kidneys, so much so that the function is in a measure arrested, and the medicine, far from being useful, has been productive of absolute injury.

Again, it not unfrequently happens, either from structural disease in the kidneys themselves, or elsewhere, that there is an undue accumulation of blood in their structure, totally unfitting them for healthy secretion, and manifested by the appearance of bloody or serous urine. Here, also, all stimulants must prove injurious. But blood-letting, by directly abstracting blood, hydragogue cathartics, by indirectly accomplishing the same purpose, or tartrate of antimony, by lowering the force of the circulation, all occasion ultimately, the same effect. The congested kidneys, relieved from their engorged condition, resume their proper function; and in this way blood-letting, tartrate of antimony, and hydragogue cathartics, might be considered indirect diuretics; but you must recollect that the liver or the lungs might be relieved in the same way; and, therefore, the term diuretic, as indicative of a special influence, is not applicable to them.

You may be called, for example, to a case of this character. An individual, advanced in life, has been exposed to cold, and shortly afterwards has a chill, followed by vomiting. The vomiting persists for several days in spite of the usual remedial means, and is found to consist of alkaline instead of acid matters; there is no evidence of any inflammatory lesion of the stomach, and there is either complete suppression of urine, or the discharge is very small, highly colored, and copiously intermixed with blood. Now, what is the explanation of the phenomena thus presented? The patient, from exposure to cold, has experienced a general congestion of the abdominal organs, more particularly the kidneys. Their secretion being thus suddenly arrested and retained in the blood, a portion of it, the urea for example, endeavors to seek an outlet through the mucous coat of the stomach, thus accounting for the vomiting, and the alkaline character of the matters thrown off, for it has undergone decomposition and become changed into carbonic acid and ammonia. Such a case as this must necessarily

end fatally unless relief is obtained either spontaneously or by judicious interference. And the latter should manifestly consist in the abstraction of blood from the loins, or the anus, or both, and such revulsive measures as are calculated to restore the suffering organs to their healthy condition. All treatment to the stomach alone would be but a waste of means, and a loss of valuable time.

I have adduced the preceding illustration for two reasons. Partly to show the relation of blood-letting in restoring the function of the kidneys; and partly, also, to demonstrate the important part these organs play in many diseased conditions, and the necessity of making inquiry in all obscure affections, as to their proper performance.

Allow me, in continuing this subject, to bring before you a few more instances of the value of correct pathological ideas, before you can hope to have a proper understanding of the rationale of the mode of operation of diuretic medicines.

All remedial substances intended to influence the kidneys must first enter the blood and be brought into direct contact with them. And in diseases in which an extremely irritable condition of the gastro-intestinal membrane exists, diuresis is often excited with great difficulty; and it is scarcely possible to cause any remedy to reach the urine by direct absorption. Where there is any considerable diarrhoea, and copious liquid stools are excreted from the bowels, the urine is always scanty and high colored, a condition necessarily arising from its concentration; water freely exuding through the intestines from the blood, and hence, but little is left to escape by the kidneys. An extreme instance of this state of things is found in epidemic cholera; here water is so rapidly pumped off through the intestinal exhalents, that the blood is left absolutely viscid and thick. Hence, the nitrogenised elements, which it is the duty of the kidneys to excrete, cannot be removed in consequence of the escape of the water by the intestines, which would normally have washed them from the circulation; and the patient oftentimes dies from a retention of the poison in his circulation, which the kidneys are unable to remove.

I said, at the commencement of this lecture, that salines, mercury, and digitalis, were all classed as diuretic medicines. I have discussed the mode in which the first of these operates, let me now consider mercury and digitalis.

Whenever a sluggish state of the portal circulation exists, either because the liver is congested, or has become cirrhotic, an obstacle is presented to the transit of the blood from the intestinal capillaries to the vena porta. Less blood passes through the liver and the ascending cava to the heart, and con-

sequently less to the renal arteries. A small supply must therefore reach the kidneys, and the urine will become diminished in quantity. In such cases, moreover, dropsy is very apt to occur, which is to be regarded as a sort of vicarious effort to relieve the congested state of the veins, by allowing the watery elements of the blood to filter through the walls of the smaller vessels. We desire in such a case to restore the functions of the kidneys, partly with a view of removing the dropsy, and partly for other reasons. It is useless here to attempt to stimulate these organs into action with cantharides, copaiba and squills, for this will result only in setting up congestion, or perhaps inflammation, without increasing the secretion of urine, simply because the fluid elements are prevented from reaching the kidneys; and if the alteration of the liver be structural and irremediable, there is no other course to be pursued but to endeavor to remove the dropsical effusion by remedies which, like elaterium and scammony, exert a hydragogue influence on the intestines. But the condition of the liver may be remediable, and experience has shown that no substance effects so promptly an increased discharge of urine in the dropsy connected with congested or even contracted liver, as blue pill. It does this by stimulating this organ into action, more bile is secreted, the portal congestion is relieved, the obstructed circulation through the heart and to kidneys is again established, and diuresis takes place.

The last of the indirect diuretics that I shall speak of is digitalis. I have told you in a previous lecture, that the physiological action of this drug, was to diminish the force and frequency of the heart's action. When the mitral orifice of this organ has become contracted by disease, or it has undergone dilatation, and there is a loss of relation between its cavities and their orifices, general congestion of the capillary vessels ensues and dropsy results, in the kidneys as elsewhere, evidenced in the first, by the escape of serum containing albumen with the ordinary urinary ingredients. Here all stimulating diuretics are not only valueless, but absolutely injurious, while the guarded employment of the infusion of digitalis, by quieting the irritability of the heart, and calming the irregular circulation, diminishes the congested state of the vascular system, and acts indirectly as a most efficient diuretic.

I have now, gentlemen, at some length entered into an explanation as to the mode in which an indirect diuretic influence is effected; little remains to be said of those that operate directly. Certain medicinal agents contain some peculiar principle, generally a volatile oil; and this principle, after absorption into the blood, seeks an exit by the kidneys. Brought into

direct contact with these organs, it occasions irritation and a moderately increased afflux of blood, and in accordance with the physiological law that the function of a healthy secreting organ becomes augmented in proportion to the increased supply of blood sent to it, provided this increase is not sufficient to overpower it, a large amount of urine is abstracted from the blood, and the kidneys, under these circumstances, may be said to have responded to the direct influence of the medicine.

The principal agents of this class are squill, juniper, turpentine and cantharides. And in reference to their operation, I would state that in a few years past, Dr. Hammond of the army, has experimented with several of these diuretic substances, with a view of determining their physiological action. He shows that juniper increases the amount of fluid discharged by the kidneys nearly one-third, and squill one-sixth. Both, however, diminish the waste of solid material, so that their efficacy is confined to dropsical affections alone. Colchicum, on the other hand, increases the amount of solids as well as of fluids, and is, therefore, entitled to rank as an alterative, among which class of remedies, you will remember, I have placed it.

Let us now consider the therapeutic indications afforded by this class of remedies. The obvious effect of diuretics, as you have seen, is to diminish the quantity of liquids and solids in the circulation. It is true that the portion of the blood evacuated by them is chiefly the water; but some of the saline matters, and also more or less of the organic constituents escape; so that these medicines may be considered depletory. Indeed they sometimes operate so profusely, that they produce weakness approaching even to prostration.

Another important effect consequent upon the diminution of the watery portion of the blood, is the promotion of absorption. It has been established by experiment, that the blood vessels, when their contents are materially diminished, take up water with avidity whenever they can find it, to supply the loss. Thirst also results from the diuretic action, with the obvious purpose of securing a supply of liquid for absorption. But it is not taken up solely from the surfaces with external communication. The liquid in the tissues and cavities is also absorbed, and hence the use of this class of medicines in dropsy.

A third effect is to purify the blood of excrementitious or foreign matter, which may, by its retention, be a source of injury and disease.

A fourth, which is produced by the stimulating diuretics alone, is to irritate the lining membrane of the pelvis and

calices of the kidneys, the urinary passages and the bladder, and thus not unfrequently either to alter the diseased surface, or to excite the parts when debilitated or paralyzed, to greater activity.

And lastly, by diluting the urine freely, as when an increased amount of water is discharged, the secretion is rendered less irritant to the parts with which it is brought into contact.

In accordance with these principles therefore, we find these agents applicable to various diseased conditions.

In the first place I would remark, that in all acute blood diseases, or those in which certain changes have resulted in this fluid, consequent upon peculiar diseased conditions, there results an accumulation of effete material, which in part explains the phenomena of the affection under which the patient labors. It is of vast importance that this should be eliminated, and as a general rule a certain amount is always passed off by the kidneys. And I know of no rule more important in the management of this class of diseases, than that constant attention should be paid to the mode in which these organs are performing their function. Through these, as I said, the greater part of the results derived from the diseased processes is eliminated, and they should be aided as far as possible by the various modes I have suggested.

Their principal employment, however, is in dropsical effusions. But, before applying diuretics to this condition, you must bear in mind, that dropsy is but a symptom of congested blood vessels; that the cause of this congestion may be permanent and irremediable, or transient only, and that in treating it you are but treating the results of disease, and not the disease itself. Nevertheless, oftentimes, this is all that can be effected, or it may be that you can address remedies to the cause, and to the effect at the same time. Thus, from a congested liver, there is engorgement of the portal vein, and subsequently, effusion into the peritoneal cavity. Hydragogue cathartics will, in all probability, by producing copious serous discharges, relieve the effusion; there the remedy is addressed to the effect alone; but, suppose you combine together blue pill and squill; the first tends to relieve the engorged liver, or the cause, while the squill stimulates the kidney into increased action, and thus removes the effect.

Let me endeavor, in a few words, to define the relation of diuretics to dropsy.

First of all, if the effusion be occasioned by, or even if it be coincident with an altered kidney, whether the change consists in alteration or degeneration of structure on the one

hand, or simple congestion on the other, whether Bright's disease, scarlatina, or congestion from the effects of cold, all direct diuretics are decidedly inadmissible. In both, the urine will contain albumen and perhaps blood, there will be a deficient amount of the ordinary urinary elements, and when structural alteration exists, the microscope will evidence the presence of certain of these structural elements thrown off with the urine. Now this condition of the urinary secretion evidences two facts, first, that the kidneys are not performing their function in a proper manner, and, secondly, that they are prevented from doing it by the existence of certain physiological changes. They are already congested as the albuminous urine shows, and agents whose mode of operation is to stimulate them to increased action, would but add to the trouble already existing, instead of removing it. Here such means are to be employed as the nature of the case may demand. Bleeding and cupping over the loins, if the condition be simply due to active congestion of the kidneys; blue pill, if the liver be the source of the evil, and digitalis and rest, if obstruction in the heart's action occasion it. These, then, are the measures to be adopted, and are in a peculiar sense indirect diuretics, but such medicines as squill, cantharides, nitrate of potassa, &c., are entirely out of place. My limits forbid that I should enter more largely into this subject of dropsy, but as a practical application of what I have said, I would advise you in all cases, before resorting to direct and irritating diuretic medicines, to examine into the composition of the urine as well as its quantity. If it contains albumen, and more particularly if it is of low specific gravity, they must be avoided, for if any effect at all is occasioned by their administration, it can only be an injurious one.

Certain diuretic remedies are of vast service in inflammatory diseases of the kidneys and urinary passages. They operate by diluting the urine and rendering it less irritant to the inflamed membrane. For in these complaints this secretion is often loaded to saturation and even beyond it with the saline and other ingredients, in consequence of the small proportion of the liquid eliminated. By increasing this, the salts which might otherwise be deposited, are held in solution, and those dissolved are rendered less irritant by the dilution.

There are certain rules to be observed in the administration of these agents which may be readily deduced from what has been already said.

First, all therapeutic agents intended to reach the kidneys must either be in solution when administered, or capable of

being dissolved in the fluids contained in the stomach or small intestines, after being swallowed. They should be given when the stomach is empty, for as they must reach the kidneys through the medium of the blood, absorption is more likely to occur just before a meal than after taking food. If the medicine be a saline, it should be so diluted as to have a specific gravity decidedly below that of the serum of the blood; that is, they should not contain more than five per cent. of solid matters. If not given in this dilute form, a very free use of water, pure, or containing mucilage, should follow them.

In the second place, during their use, the state of the skin should be attended to, and anything like perspiration avoided; nor should they, as a general rule, be given at the same time with cathartics or diaphoretics. The patient should be kept cool, or at least should not be allowed to become heated, as by too much bed-covering at night, during their administration.

In the third place, it is as well that the drinks taken during the use of diuretics should be cold.

And fourthly, care must be taken that they do not act on the bowels, for this will completely counteract their operation on the urinary organs. For this reason, when they have any tendency to operate as cathartics, they should be given in small and repeated doses instead of large ones. Combining a small quantity of morphia with the diuretic will often check its purgative tendency without interfering with its action on the kidneys, and may therefore often be added with advantage.

And now, gentlemen, in conclusion, I think I have said enough to show you that diuretics need not be altogether uncertain agents, if they are used with due discrimination, and with a proper knowledge of pathological processes; and that as direct or indirect remedies they are among the most important in the whole materia medica. Reflect for one moment what office in the economy the kidneys fulfill. Not only are they a counterbalance for the perspiratory function, so that when one acts the more, the other secretes the less, more urine in winter than summer, and more perspiration in summer than winter;—but their duty also is to prevent too great fullness of the blood-vessels. These latter must take up the fluid presented to them, but it is the office of the kidneys to abstract any excess from them, and thus prevent them from being overloaded. But they do more than this: all the materials formed as a result of the disintegration of the body, must find an outlet: the most important make their exit by the kidneys. Many substances taken into the economy, either as poison, as medicine, or as food, and which can subserve none of the purposes

of the economy either for nutrition or respiration, must be thrown out, and the kidneys again are the principal organs to which this purpose is delegated.

With all these manifold offices then, how important becomes a proper understanding of their function, and the mode in which they are performing this function, in the diagnosis and prognosis of disease. Diuretics are the agents which cause this function to be increased; some augmenting merely the watery portion of the urine, while others seem to stimulate these organs in the performance of their great office of depurating the blood, and increase in a very remarkable manner the quantity of solid matters eliminated. With these effects what valuable assistance are they capable of affording to the treatment of disease. But I must tell you the two are mutually dependent, no exact rules can be laid down for the administration of diuretics, and you can only be guided by a correct knowledge of the healthy function of these organs, and the intimate relation they bear to most diseased conditions.

I have attempted, gentlemen, in the present lecture, to give you a brief outline of the rationale of action of this class of remedial agents. It is a subject that enlarges as I go on, and if my limits would permit, might readily embrace several more lectures, and will at all times be found to repay your careful study. I have taught you to day, views that are in many respects not at all in accordance with generally received opinions, but which from some study and experience, and to the best of my knowledge I believe to be true.

CHRONICLE OF MEDICAL SCIENCE.

HYGIENE.

1. *Sanitary Unsoundness.*—(Med. Times and Gaz.)

"C'est une chose admirable que tous les grands hommes ont toujours du caprice, quelque petit grain de folie mêlé à leur science."—*Molière*.

There is a common-sense view to be taken of every subject. Most of us are naturally inclined to fall into this. Society, as a whole, invariably does so when left to itself, or in the long run. But it is subject to perturbations. Little epidemics of mental squint get among us, and we see things double or wrong; small men as giants walking, and they make us start for a moment. Some great bull of a Liebig stalks across the field of reformatory science, and forthwith all the frogs and frog-lings begin to swell themselves out; in time they burst, each making a small noise and nuisance of its own. The commotion they stir up is one of the petty vexations of life. We have occasional sanitary revivals. Hysterical paroxysms of fugitive horrors seize upon hosts of us at once. We get a dread of death-dust in our churches, of motes in the sunbeam, of organic atoms in our wells; we shudder at the sight of our butcher when we happen to remember Smithfield, we feel the first creepings of an ague if we think of Dr. Elliotson and a stale cabbage. We fall into superstitious reverence for purity, and send down a Commission of Royalty to Glasgow, to do homage to water with nothing in it. We set up a standard of 0·0, and endeavor to reduce all the elements of life and death to it. No smells, no smoke, no dirty water, no dust, no noise, no anything. These are our millennial aspirations. Such periodical sanitary hysterics have their foci, their first victims. Curiously and paradoxically enough, these are not delicate, over-sensitive women, or precocious boys and girls, who have been stimulated into a readiness to feel anything and believe everything. Names of strong men decorated with the alphabets of all nations in a state of dislocation, are known in every popular lecture room in the kingdom. Even the President of

the Microscopical Society has been detected prying into an invisible film of water, with an incalculable power of vision; and lo! we must no longer drink. Locks are put on the handles of the parish pumps. Nothing is fit for poor thirsting mortals but the genuine, pre-Adamic, virgin element, drawn from the lowest depths of the primitive, non-fossiliferous, volcanic, hypogene rocks. The contagion spreads. Old women sniff at the steam of their tea-kettles, dogs are difficult to please with their puddles, analytical chemists are seen dabbling in the drinking-fountains, and our quick-suspected young imps turn away in scientific disgust from the tempting, but per-cented, trickle. The great Metropolitan County Coroner is another "local source of infectious emanation." He has a pious fear of fraud and filth, and commissionises the town. Henceforward the public buys nothing but certified grocery, and cigars rolled by fingers washed in rose-water. Every panic-struck shop-keeper hastens to add to the notice of his license to sell tea, coffee, tobacco, and spices, the coveted words, "Warranted pure and clean by the Sanitary Commission." We are inspired with all sorts of culinary doubts. Domestic vigilance is aroused; agitated mistresses institute manuary inspections among the Soyerinas of the basement, and explore the alluvial deposits in crateral abysses.

"Magna movet stomacho fastidia, seu puer unctis
Tractavit calicem manibus, dum furta ligurrit,
Sive gravis veteri crateræ limus adhæsit.
Vilibus in scopis, in mappis, in scobe quantus
Consistit sumtus?"—HORACE: Sat. Lib. II. 4.

"When the Funeral Pyre was out, and the last Valediction over, Men took a lasting Adieu of their interred Friends, little expecting the Curiosity of future Ages should comment upon their Ashes." So the stately and magniloquent Sir Thomas Browne. But the howl of another revivalist comes from the tombs. Dr. Letheby sings a hideous requiem over the dead. His meditations are more lugubrious than Hervey's. He fills our churches with horrors more sulphureous than those of Calvinism. His vocabulary, as exemplified in one short paragraph of his last report on the city burial grounds, would scare an ogre;—"Human remains, rank remnants of graves, the sanctuary a charnel-house, festering rottenness, grave-yards used as building sites, putrid remains, stagnant atmosphere, soil charged with corruption, sanitary requirements,—hazardous in the extreme—rash risks, fraught with danger to the community." What Christian pulse can vibrate rythmically under the reverberations of such a Dantesque volley? With horrid sounds

like these in his ears, who would approach to read an epitaph, or hang a garland over the grave of innocence? The man who heeds the silent appeal "Siste, Viator!" must be more than hero himself. Dr. Letheby's sepulchral calculations are simply disgusting. He writes about the superficial area of grave-yards, their average elevation, square yards and cubic feet, and "thirty thousand tons of rank, festering rottenness," till one sickens at his figures as if they were the breath of a vampire. How strangely, too, extremes meet. How harmoniously the aspirations of the "highest developments of science" chime in with the cravings of the lowest forms of cannibalistic appetite. Dr. Letheby has not lost all the propensities of his pre-historical originals.

"Go, knock and call,
He'll speak like an Anthropophaginian unto thee;
Knock, I say!"—SHAKESPEARE: "Merry wives of Windsor."

"Natural selection" has not yet elevated him into the foundership of a new species. He yearns for the time when the human remains, now desecrated by his foul epithets, shall "once more be the constituents of a living body or the harmless elements of a mineral compound." To become again the constituents of a living body some one must eat, drink, or breathe them, and he sighs out the plaint, that "years and years must go by before they can pass through their appointed changes." Let the city people beware in time, lest they become the victims of their own Frankenstein.

But what does all this mean? Why is society incessantly pestered with these villainous phantasms? Has the instinct of self-preservation been lost from among men? Do the restorative powers of nature want prompting? The bare fact is, that in one of our occasional panics about what we should do to take care of ourselves and families, we raised a few enthusiastic gentlemen to a little parochial elevation, and they have grown giddy and lost their balance. They neither see things as they are, nor speak plain English. All their senses are bewildered. Everything they look at is distorted, all they hear is discordant, and whatever they touch, taste, or smell, has a smack of the abominable about it. But when matters come to such a pass that we are told to believe all our grain is mildewed, all our cattle are diseased, all our springs are polluted, all the air we breathe is tainted, that all our stores are shams, that we are the prey of one universal swindle; and we find ourselves, after all, led by the machinations of these very same wholesale denouncers into the egregious folly of expending millions to throw away, by a gigantic system of drainage, the

very thing we most ought to preserve, it is high time to rouse up and see for ourselves, to call things by their right names, and burst the bubble of the new sanitary glossary. If our officers of health must pry into the workings of everything in nature, and concoct reports of their peddling, let us at any rate insist upon the exercise of a little common sense and clear vision, and upon the use of ordinary, uninflated, unimaginative description.

Our readers will see that we think some of our sanitary scribbling very nonsense. The season of pantomimic exaggeration and license is just over. Surely the Lord Chamberlain might take official sanitary performances under his correcting care. We made no objection to rational precaution, to calm demonstration, to fair discussion, nor to faithful reports. Our protest is against foolish excess.

"Dum vitant stulti vitia, in contraria currunt."—HORACE: Sat. Lib. I. 2.

2. *The Slaves of Civilization.*

The Edinburgh Review for January has an interesting article suggested by an examination of various works, relating to mortality in the trades and professions, from which the New York Commercial has extracted in the subjoined synopsis many important facts. The result of investigations made in England, into the condition of the laboring classes—not merely those who labor in the dark places under the earth, but those who are engaged in the processes by which articles of taste and luxury are prepared—will be startling to all who, surrounded by the appointments of easy life, have given no attention to the multiform perils which environ those by whom these appointments are supplied. The mirror which reflects our features, and the glazed cards which we leave on our friends, give no token of the trembling form of the artificer, poisoned by mercurial fumes, or paralyzed by the hazardous toil by which he sought to earn his livelihood. The porcelain vase on the mantel is of rare beauty, but it has infected the "dipper's" hand with a disease which will destroy its cunning. All this suffering proceeds, the workman falls out of the ranks, and another rises to take his place, reckless of the fate that awaits him, and gratified with the increased compensation awarded to his labors.

In this day of "silver forks," it will be surprising to know that more steel forks than ever before, are now manufactured at Sheffield. These forks, and needles also, are ground upon dry stones, the grinder necessarily sitting in the posture best

adapted to fill his lungs with the fine dust, and to wound his sensitive eyes with the steel sparks. The dry fork-grinder averages 29 years, and thus exemplifies at an early day the solemn ritual—"dust to dust." Some dry-grinders wear spectacles, and these are often found flecked with bits of steel, which, when red hot, penetrate the glass. This same dry-grinder, in order to give the smoothly rounded back to a razor or a scissor blade, sacrifices his health and life to the unimportant difference between the straight and the curved line which he forms. The statistics of Sheffield show that the ascending grade of longevity is in direct proportion to the amount of water used on the stone, the strength and age of the grinder being considered. Yet, we are informed that matters are not so bad as formerly. The introduction of fans to blow the dust away from the stone, of magnetized wire screens for the face, and the general adoption of the "beard movement," by workmen mature enough to raise these hirsute appendages, have added to the length of life. Still, the grinders say "the trade is bad enough as it is, and if the men lived longer, it would be so overfull that there would be no such thing as getting a living.

Now, as to the miner—one of the 300,000 persons in Great Britain, who enter the bowels of the earth at morning and emerge at evening. Beneath the soil he works—the very industrial Atlas of England—sustaining the wealth and greatness of that country which without its coal and iron, its copper and tin, and its giant machinery feeding upon them and reducing them to new forms, would not enjoy its present proud pre-eminence. Here, in these cold dark mines, the miner toils cramped in position, till "the Apollo-like form of man becomes permanently twisted and bent, like the gnarled root of an oak, which has been doubled up in the fissure of a rock." In these galleries two feet high, pursuing the vein of metal or coal, and picking at the side and top, the collier lives his life of toilsome constraint, knotting himself till an erect position is a punishment to him. Foul air surrounds him; fire-damp blasts him to a cinder, or choke-damp noiselessly blots out his life. A single blow of the pick may let in upon the collier an invasion of either one of these damps, and the pit mouth may be crowded with a "wailing multitude of newly made widows and orphans." Thus 1,500 lives, and 10,000 accidents annually attest the dangerous nature of this vocation.

In England the mortality among miners from accidents alone, is 4.5 to the thousand; in Staffordshire alone 7.3; while in Prussia it is only 1.9, and in Belgium 2.8. Then add the diseases caused by deprivation of light and air, by the foul

breath of the caverns and of the decaying timbers in them, and by the volumes of coal-dust taken into the lungs. When the collier dies, his lungs look as if dipped in black ink. The dry-grinder has a similar lung. The average of sickness among colliers between the ages of 20 and 60, is 67 per cent. more than the general average. Yet the coal mines can be ventilated at a cost of a penny per man per day. This ventilation will save ten-fold its cost in the increased labor done by the colliers, and the preservation of the wood "batrices" in the mines. In the Cornwall mines, the workmen, after a day of toil, are obliged to climb ladders for many hundreds of feet to reach the mouth of the pit. This is equal to the labor of ascending a mountain.

All trades that are carried on in dust are more or less immediately productive of disease. Millers, masons, bricklayers, snuff makers, pearl button makers, preparers of hair, flax beaters, and many others, all suffer from diseases peculiar in many of their symptoms and effects to the special trade, but bearing a general family resemblance.

Strangely enough, one of these curious and patient investigators of health finds that scavengers and chiffonniers are remarkably healthy. Human life meets filth nowhere more closely, yet the investigation finds them "a healthy looking, ruddy complexioned race," wearing their natural rouge under their artificial tint. The impurities with which these people come in contact are, however, in the open air, and moreover, the power of ashes to absorb noxious emanations must be considered. But scavengers are usually exempt from febrile complaints. It is known, too, that the occupation of tanners and workers in oil, and of butchers, has a certain exemption from pulmonary complaints. Some curious facts are mentioned by the Review in this connexion, which we must omit.

The lucifer match maker with his cadaverous complexion, emaciated form, and necrosis of the jaw, is another instance of the slavery of civilization. Phosphorus, in one form so essential to bone, is, in the fumes of the match factory, destructive to it. The chemist brings his results to bear here, and it is found that the oil of turpentine exposed in saucers, where this match making proceeds, absorbs the mischievous vapor.

The gilder of metals and the coverer of mirrors are other sufferers. While the process is going on, the workman is invested with mercurial fumes; his body is spotted with metaliferous particles, and he becomes a "shattered human creature, with trembling muscles, brown visage and blackened teeth." The belle who surveys her wondrous beauty in the

glass would start back in horror if the visage of this victim of luxury and vanity should but appear in dim shadow far down the depths of her clear reflector.

A large contingent to the army of death, is furnished by tailors, bakers and milliners in large cities. They are mostly killed by want of fresh air, which does not reach them in their constrained position or in their confined or heated rooms. The story of sewing women need not be told here. Their sufferings are elements of our advanced civilization, as well as that of England. And from the very nature of the case, their wants and perils are most familiarly known, but known only to be pitied or disregarded.

3. *Vital Statistics.*

What sanitary science has done, and has yet to do, may be gathered from the following. The science is quite of modern date; but since the application of its simplest principles, the cleansing of streams, draining of houses, and introduction of pure water, the following evidence of benefits resulting, has been given us:—In Liverpool the mortality had fallen from 37 in the 1000 to 27; in Bradford from 28½ to 22; in Gloucester, from 27 to 24. Taking an average of nineteen towns which had been treated in this way, it was found that the death-rate dropped from 28 in the 1000 to 21. Croyden was taken in hand scientifically some time ago; and since then an average of 196 lives has been saved in the town every year! The mortality among the pauper infants and pauper children in the metropolitan unions has been enormously reduced. In the Military School at Chelsea a death-rate of nine in the thousand has been brought down to one of four. The female prisoners at Brixton, who live under sanitary rules, are three times as healthy as the poor needle-women of London; and at Pentonville, notwithstanding the allowance to be made for moral depression, the death-rate is only one-third of that prevailing in populous towns. But still there is a great work to be done; for as we are told, authoritatively, that at least 100,000 persons die annually in these islands at premature periods and by preventible deaths; and at least 1,000,000 more are wasted and debilitated from similar causes. Talk of war, indeed! why what battles or contests ever wrought havoc like this—havoc, be it remembered, not occurring at intervals, like an exceptional calamity, but carried steadily and incessantly through the ranks of our population? And we have still to remember the lesson taught us by the Crimean war. In that war we lost

altogether 20,800 men; but of this number 5000 only were slain by the enemy. All the rest—15,800 soldiers—fell victims to privation and disease.

4. *Poisoned Buns.*

Death in the pot is still daily awaiting us in this favored Isle. We are told by the *Times* that the trade of this country is becoming notorious for great and disgraceful sophistications; and true it is, that almost everything which we eat and drink is tainted, falsified, and poisoned. Here is a new style,—chromate of lead in buns to save eggs!

“A case occurred at Clifton, on Friday, which might have been attended with fatal consequences, had not prompt measures been taken to counteract the effects of some poisonous matter used in the composition of Bath buns, and which nearly cost the lives of six young gentlemen, pupils in one of the first boarding-schools in the place. The circumstances of the case were as follows:—Three of the youths had been walking at Redland, and purchased some bath buns at the shop of a confectioner named Farr. In the course of the afternoon three other lads from the school went to the same place and bought some more buns. In the evening all six were seized with violent sickness, and presented the symptoms of having partaken of some poisonous substance. Mr. Cross, Surgeon, of Clifton, was called in, and prescribed the necessary remedies, but the patients continued so ill during the night that two of them were not expected to survive. Fortunately, however, but after great suffering, they all recovered. Some of the buns which had not been consumed were subjected to analysis, when it was found that each of them contained seven grains of chromate of lead, which was used as a cheap substitute for eggs, for the purpose of coloring the buns.”—*Med. Times and Gaz.*

EDITORIAL AND MISCELLANEOUS.

PITMAN CLEMENS SPENCER.

CERTAIN individuals by their skill, their acquirements or even by their activity, render themselves an integral part of a profession's history in the particular section in which they reside. No faithful record of the annals of Virginia Surgery can be written, which gives not a prominent position to the name of Dr. PITMAN CLEMENS SPENCER, of Petersburg. For two score years has his name been a household word in South-Side Virginia, and over a section of country reaching from the stream which rolls at the foot of our handsome Metropolis far into the limits of North Carolina, his word has been the law in certain affections, from which there was scarcely ever a higher appeal.

Dr. Spencer was born the 28th day of July, 1793, and died the 15th of January, 1860. He was the son of Gideon and Catharine Spencer of Charlotte county, Va. Colonel Gideon Spencer was a lieutenant in the State service during the Revolution and received, on the 11th of January, 1833, twenty-six hundred and sixty-six and two-third acres of land in compensation. He was also a volunteer in the war of 1812, was Colonel of the Charlotte county militia, and represented his county one or two sessions in the State Legislature.

As regards his preliminary education, Dr. Spencer enjoyed but few advantages, although, perhaps, not much inferior to those of most young men at a period when the facilities for acquiring knowledge were not as accessible as at present. Among his early preceptors was the Rev. Dr. John H. Rice, of Charlotte county. In 1810, in the seventeenth year of his age, he commenced the study of medicine with his brother, Dr. Mace C. Spencer, with whom he remained until the war of

1812, when he is said to have volunteered his services, and to have acted as surgeon's mate to some detachment located at Norfolk, Va. He next attended lectures at Philadelphia for two or three years, and graduated in 1818. After graduation he located himself at Nottoway C. H. in association with Dr. Archibald Campbell, still of that place, and for whom he seems to have retained a lasting affection. About 1827, he left this country for Europe, and after passing some time in London and Paris he made a tour to Switzerland, Italy, &c. Returning to our State in 1830, he located himself at Petersburg.

As has already been indicated, Dr. Spencer's fame will chiefly endure as a surgical one, and from early youth to an almost hoary age, this seems to have been the bent of his professional inclination. It was especially to lithotomy that he gave his closest attention, discarding lithotripsy or stone crushing as not comparable to it in results. His choice in the operations seems not to have been made without due deliberation. He was not only possessed of an admirable set of crushing instruments, but it is gathered from his Parisian correspondence that in 1828 and '30, he devoted "two or three hours every day to breaking the stone and applying the instruments upon the dead body," and that "he studied the use of the instruments with one of the gentlemen who made the discovery of breaking down the stone" (perhaps Heurteloup or Civiale).

He performed the lateral operation twenty-nine times, losing only two cases in the whole, and these the first two operated upon. A report of fifteen of these cases is to be found in the first volume of the *Virginia Stethoscope*, page 157. Twelve others are reported in the eleventh volume of the *Virginia Medical Journal*, and a thirteenth alluded to, though not reported upon. March 31st, 1859, he operated upon Richard W. Vaughan, of North Carolina, aged eight years, with absolute success, bringing away a stone weighing five hundred and eighty grains. At the 7th page of vol. XI. of the *Virginia Medical Journal*, the editor says in a note, that "Dr. Spencer's proportion of deaths was one to fourteen, whereas, according to English statistics, one in eight died, the Philadelphia

tables being about in the same ratio, while Civiale estimates that in every six operations performed in the French Hospitals one death occurred. Dr. Spencer always denounced the use of a catheter after an operation, but tying the knees together, patiently awaited a passage of urine *per vias naturales* the third day. He used Dupuytren's lithotome caché.

The good fortune which attended Dr. Spencer's operations in lithotomy seemed to follow his knife in whatever else he undertook. His amputations, his removal of tumors and sections of every kind were always executed well and terminated fortunately. His prognosis in traumatic injuries seldom erred, and he was a rare instance of a surgeon who was often sanguine of saving a patient who suffered with tetanus and was still more rare in frequently succeeding.

Although there are those who take pleasure in refining and speculating upon such a subject, yet it would serve little good purpose to philosophize upon the qualities which secured him confidence and tended to establish his reputation. Certain it is that no Virginian will question the right by which he holds a niche in the temple of fame. While one individual desires for his model man of science elegant facility of action, another great acquirements, another indefatigable activity and industry, yet all desire success, and in the language of another, if genius be the art of success, then it may be claimed for the subject of this brief notice. However brilliantly endowed an individual may be, he is ever loth to use any other faculties than those which bring him most easily to his ends, and the oft-quoted complaint made by the Austrian against the modern Alexander, "that he despised all the rules of war," is remembered by all. As an operator there were those among his contemporaries who excelled him in some things—in success, perhaps none. Dr. Spencer seems always to have kept a steady and unblenching eye upon the final result at which he aimed, and being well informed of the inferior importance of collateral misadventures, he almost unfailingly reached his main object without "variableness or shadow of turning," and his operations, although not free from the unavoidable accidents which

befall every surgeon, were seldom unsuccessful, and his errors nearly always subject to repair. His extensive, and we may almost say, his world-wide reputation as a lithotomist, well exhibits what a position may be attained in what may be called a provincial town unaided by metropolitan or academic advantages. His loss will be severely felt by the students and profession of Petersburg, as they are deprived of an admirable school for observation and experience.

Such is an outline of the career of Dr. P. C. Spencer. It may be that it is a small tribute to one who so faithfully served his generation and who retires from the stage with so much distinction. His laurels, however, have been already achieved by himself, and the care and anxiety with which his chaplet has been woven are a grim rebuke to the pen which would assume to freshen them. It is, however, a very grateful pleasure to him who traces these lines to drop his sprig of evergreen upon the tomb of the departed, and although it may be that the deceased had friends more ancient and tried, it will be a lasting consolation to the writer that he approached sufficiently near to the sanctuary of his heart's affections to bear testimony to the tender regard he was capable of practising towards those who had once gained its portals.

J. W. C.

Petersburg.

PROFESSIONAL PECKSNIFFS.

CENSORIOUS physicians have sometimes complained of pious brethren, disposed to make their religious connections useful in a business way, who obtrude their sanctimoniousness on the profession, relating their experience before medical societies, or enriching the journals with descriptions of the illness of Elder Sniffles's child, or the miraculous recovery of the Rev. Mr. Honeyman's grandmother. An amusing specimen of this class of practitioners, among whom the affectation of godliness sup-

plies the want of knowledge and skill, is found in Mr. Suttleffe, of London, from whose work* we are about to make a few extracts :

Hoarhound Tea keeps a Saint out of Heaven upwards of 24 Years.—"In the summer of 1800, I was asked if I wished to see a triumphant saint expire. 'Much more,' I replied, 'than to see Rome in all her pristine or present glory.' I was accordingly directed to call on Mrs. W——, of the Surrey Road, which I did, in whom I beheld the nearest approach to an animated skeleton I ever expect to see. She instantly recognized me (having often met me at the sanctuary), and shook hands feebly. She was on the mount of God's unchanging love."

Mr. Suttleffe had the cruelty to administer hoarhound tea, which prevented the saint from "going home." When informed she was out of danger, she shed tears of grief. She shortly afterwards retired to Warwickshire instead of Paradise, and grew quite lusty.

Fatal Hæmorrhage from a Bubo.—Mr. Suttleffe was called to a young man with a sloughing bubo, where "the pulsation from the iliac artery was awful." The artery burst and the patient quickly bled to death. "I have since thought that a ligature applied to the artery might have arrested the bleeding, if not have saved his life." On returning home, Dr. Suttleffe reflected on those words of the Apocrypha—"Oh, Adam! what hast thou done?" We presume our readers will add—Oh, Suttleffe, what didst thou leave undone?

Aphonia.—Our author, in common with his tribe, is an admirer of old women, and observes, "that old women do as well as old men, and sometimes better." In illustration of this aphorism, he mentions two cases of aphonia which baffled him, but were speedily cured by an old woman with "gin and oatmeal."

Flannel.—Dr. Suttleffe expresses a mortal antipathy to the wearing of flannel, quoting the prohibition of the Prophet

* *Medical and Surgical Cases; selected during a practice of 38 years.* By EDWARD SUTLEFFE. 8vo. pp. 628. London, 1824. The book is now rare.

Ezekiel (chap. xlv.), "They shall not gird themselves with wool that causeth sweat."

Uric Acid.—A compound of rhubarb, soap and juniper is recommended by Mr. Suttleffe, "to sweep out the kidneys, ureters, and bladder, incommoded with red gravel. I call it my *besom*, and it is thought to be an appropriate name in the circle in which I move."

Mania.—Mr. Suttleffe advocates the use of ground ivy in insanity. "I cannot call to mind a single case of mania where the *glecoma hederacea* has had a full trial, without eventual recovery."

Puerperal Fever.—A "scripturally pious" lady had puerperal fever, which completely baffled Mr. Suttleffe and his friend, Dr. Sims. They had the mortification to witness "deeper advances toward despondency," in the midst of which "the scene partook not of the house of mourning, but was rather an epitome of the abode of bliss." Being pressed for a prognosis, our author stated: "that in reference to the laws of the obstetric art, the patient must die; but as Dr. Sims and himself had now turned over the case to God, it was possible she might recover." It does not appear that the DEITY took charge of this case, for the lady died. "Fraught with instruction in its progressive stages, this case was singularly honored in its termination: for the children of the deceased came forth with one consent to join themselves in a perpetual covenant to the Lord and his church, where they now shine as polished pillars in the temple of grace."

THE CASE OF JOB MEDICALLY CONSIDERED.

Messrs. Editors,—I have been led, on a careful consideration of the book of Job, to believe that his disease was a very bad case of varioloid. Chap. ii. v. 4, Satan says, "skin for skin," which shows he was bent on a cutaneous disease.

Chap. ii. v. 6, Satan is commanded to "save his life." Now

no one dies of varioloid. V. 7, "the sore biles or boils" certainly well represent variolous pustules, which occur "from the crown of the head to the sole of the foot," and the fact of Satan so "smiting" him is another point of resemblance, inasmuch as the victim of this disease readily believes himself possessed of a devil. V. 8, alluding to the "scraping himself with a potsherd," and "sitting among the ashes," but recounts methods of allaying the well-known itching which attends this eruption.

V. 13: "So they sat down with him upon the ground seven days and seven nights, and none spake a word unto him, for they saw that his grief was very great." Now this, I think, is one of the strongest grounds (I mean the verse, not the ground they sat on,) why we may suppose it was varioloid. Why did they sit seven days? It was because the eruption, as is well known, begins to dry up on the 8th day, and the patient to amend, which is the distinctive feature of the disease.

Take Job's complaint in chap. vii. v. 3 to 7: "So I am made to possess vanity, and wearisome nights are appointed unto me. When I lie down I say, when shall I arise, and the night be gone? And I am full of tossings to and fro unto the dawning of the day. My flesh is clothed with worms and clods of dust, my skin is broken and become loathsome. O remember that my life is wind, mine eyes shall no more see good." Now all these symptoms are marked, especially the last line.

Again, v. 13, same chapter: "When I say my bed shall comfort me, my couch shall ease my complaint, then thou scarest me with dreams and terrifiest me with visions, so that my soul chooseth strangling and death rather than my life. I loathe it." Now, the delirium of varioloid is well known, and the visions are both amusing and horrible.

Everywhere we have much evidence which goes to support this theory, and only one circumstance, that I know of, which tends to show the contrary, and that not a medical one, viz: he had three friends who came to see him when he was sick.*

* Thanking our ingenious correspondent for his communication, we would like to ask him if he has ever had the varioloid.—Eds.

THE AMERICAN MEDICAL ASSOCIATION

Will hold its thirteenth annual meeting at New Haven, Ct., on the first Tuesday of June, 1860.

The secretaries of local societies, colleges and hospitals, are requested to forward the names of delegates, as soon as they are appointed, to

STEPHEN G. HUBBARD, M. D. *Secretary.*
New Haven, Ct.

MANLY VIGOR AND SILENT FRIENDS.

We have often had occasion to illustrate the ingenious methods, adopted by the Manly Vigor and such-like quacks, of relieving their victims both of their present and their prospective cash. It is easy to understand how young men are led to give "post-obits" for the sake of present enjoyments; but that they should be brought to sacrifice the means of existence in the future, for the sake of removing evils which have no existence except in their own imagination, appears to us to be an incomprehensible refinement in the art of folly. The advertising quacks of the "Manly Vigor" School must have the merit of suggesting the invention to the unwary of the rising generation. The facts which our Law Courts occasionally disclose, and the still more numerous facts which come to the professional ear, sufficiently prove how successfully these gentry lay their plans. They know, and they act upon the knowledge, that there are men who will willingly sacrifice all their means to ward off the fear of impotency; and who consider no sacrifice too great, if they can thereby ensure their complete purgation from the dreaded ravages of syphilis. The motto of the fraternity is, "The patient's infirmity is the quack's opportunity." And this is the only explanation that can be given of the many cases of swindling which are daily perpetrated under the guise of philanthropy. One knows not, in considering them, which most to admire and wonder at,—the supreme credulity and blindness of the duped, or the audacity and transparent roguery of the duper. It is not improbable that the gains of these pseudo-Medical sharpers exceed that obtained through the machinations of all the other numerous quackery-mongers of the metropolis; which is saying that the gains are enormous.

The law is impotent for their annihilation; and still permits them to ply their unhallowed trade with impunity. The press lends itself most largely to the furtherance of their designs. There is therefore nothing left to the Medical Journalist, in the present state of things, but to guard the timid and unwary youth against their toils. It certainly is no great credit to the public journals of this country, which set themselves up as the arbitrators of right and wrong, and as patterns of virtue and uprightness, that they should be mainly and pre-eminently the means through which this enormous system of swindling and villany is furthered and promoted. If there were no advertising and puffing of the wares and the false doings of these men, there would be no catching of the dupes. The guardians of the public morals—the Press—are they who profit most, next to the quacks, out of the proceeds of all this foul and dirty work! It is actually a fact, that many journals owe their very existence to the proceeds of these disgraceful advertisements. They actually live and breathe through the insertion in their columns of filth which no decent man would allow to be read in his house. We can only raise up our hands in wonder at the amount of dirt which men will swallow for the sake of money, and of degradation which they will undergo.

In all shapes and forms Quackery encircles the youth of this country—advertises itself to his notice. A most insidious specimen of this kind has just been put into our hands, and we think it worthy of special notice. The author of the following note addresses himself thus to each Freshman of the University of Cambridge (doubtless of Oxford too):—

“Dear Sir,—If the book to which the accompanying notice refers treats on matters indifferent to you, I pray your pardon for directing your attention to it: if, unfortunately, you have a special interest in the subject, perhaps you will not censure me for having done so.

I am yours faithfully,

T. H. Y.”

Dr. Yeoman, M. D., Glasgow, residing in Lloyd-square, London, is the author of the above interesting invitation. What the nature of the book is to which he refers we need hardly tell our readers. It of course treats of “*Debility and Irritability, Mental and Physical, induced by Spermatorrhæa*,” etc. etc. Fifth Edition. Price, 2s.; by post (only from the Author), twenty-six postage-stamps.

In the notice thus forwarded to each said Freshman, the Freshman is told how the Doctor first became learned in this

decent department of his trade. In 1829—thirty years ago—"A valued friend and fellow-student made me the confidant of his sorrow and its cause, and I became the medium of communication between him and one of our most esteemed teachers at the Medical School of the London Hospital."

This will show the *length* of his knowledge on the subject; the *breadth* of it may be gathered from his extended fields of observation, *hic et ubique*, in Paris, Glasgow, Spain and North and South America. But even thus armed with a world-wide knowledge of varieties of spermatorrhœa, the Doctor hesitated in proclaiming his knowledge before the face of a critical profession:

"In consequence of sordid and vile pretenders having claimed generative arrangements a *specialite* for their unholy enrichment: in consequence of many of our best and most able practitioners having ignored Spermatorrhœa as a special and direct cause of much mental and bodily ailment,—it required some moral courage for a qualified physician and a gentleman to advance before his brethren, and front the ignorant extorting creatures who injure and dupe a too credulous community. To interfere with and interrupt their dirty work was at one time considered a sure way of soiling yourself. That such is not, in fact, the case, the fourth edition of this work testifies."

His success is evidently his justification. And now in a fifth edition he feels compelled, through the impulses of gushing love towards his younger male species, to rush to their rescue from the hands of sordid and vile pretenders; to open to the afflicted ones a parental refuge of advice; and to suggest to the yet untainted a ready prospective cure for their future possible evils. He is "pained," as he says, "to find so much self-caused misery existing among our fellow-creatures, and so much ignorance and extortion practiced by the vampires who pollute the newspapers of the day with their disgusting," etc. And then to prevent any possible mistake as to his own position, he tells the fresh youth what a high man he is:—"My professional reputation renders it unnecessary—had I the vain desire—to descant on the success of my practice; but I must be permitted to add, that each day's experience confirms the value of the treatment detailed in the following pages."

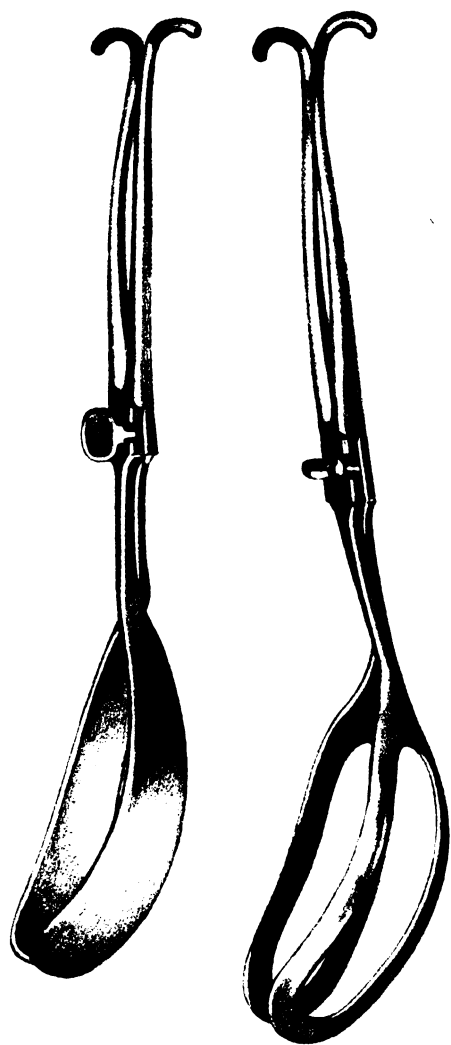
We have not noticed this pretty little specimen of professional business for the sake of amusing or astonishing our readers, but purely to warn those of our brethren who may be unaware of it, of the fact, in order that they may exert their influence in frustrating the works of this valiant yeoman of Medicine. Here is, indeed, the sublimity of puffing! The

injury which is thereby done to nervous youths will be readily appreciated by men of Medicine. As will be seen by reference to the notice, a most abominable insinuation is suggested to the mind of every young fellow who goes to Cambridge, and no doubt many a one who has never had a day's illness in his life, is in consequence, led to reflect on something which may have at one time or other occurred to him, and becoming frightened, has fallen into the hands of gentry of the species here indicated. And all this, too, done under the guise of the highest professional repute and position! A slap in the face given right and left to the "sordid and vile pretenders;" and exclamations of pity for a "too credulous community!"—*Medical Times and Gazette*.

VARITIES.

An Enthusiastic Female.—Dr. Closmadeuc was suddenly called to a convent to attend upon a young female, who, it was said, was in an attack of epilepsy. The Doctor finds his patient half-asphyxiated; and therefore at once bled her largely, and put mustard poultices to the calves of her legs. The patient hereon became more calm, and coughed and spat up somewhat, and made slight gesticulations. And then the Doctor learnt that under the influence of exaggerated scruples, she inflicted various penances on herself; she ate earth; and some of her companions in solitude had seen her swallow medals (holy ones, of course). He could not open her mouth, however, so he gave tartar emetic; and at the first dose the patient made an effort to vomit, whereon appeared between her teeth the end of a cross seven centimetres long; this was laid hold upon, and then was drawn forth from her mouth an enormous rosary two metres and twenty centimetres long, having seven medals stuck on it at intervals!—*Gaz. des Hop.*

"*Parasites*," writes M. Bazin, "play a triple rôle of cause, symptom, and lesion. They become a cause in determining physical lesions, as in the furrow formed by itch, or in its provoking, at a certain period of its existence, different cutaneous eruptions. Parasites are also symptoms. Does not the achorion, in fact, constitute the little cups of favus? They play the part of lesions also, by union with the cutaneous elements which they have affected, or with the morbid products whose formation they have caused." M. Bazin is no believer in spontaneous generation. "Parasites always come from without, and spring from beings like themselves."



KNIGHTS FORCEPS.

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ART. I.—*Case of Paralysis of Motor Power in one Leg, and of Sensibility in the other.* By SAMUEL CHEW, M. D., Professor of the Principles and Practice of Medicine in the University of Maryland.

ALVINA R., 18 years of age, was admitted into the Baltimore Infirmary, September 28, 1859.

She stated that she had generally enjoyed good health till about a year ago, when she began to experience a sense of weakness and heaviness in her right leg. This disorder gradually increased until power of voluntary motion of the limb was wholly lost. In February last, the faculty of sensation in the left leg began to be impaired, and was soon in a great measure destroyed.

She could assign no cause for the paralysis. She had received no accidental injury, and had made no violent muscular exertion; her catamenial function was regular, and she was not aware of having suffered from exposure to cold or to inclement weather.

When she entered the hospital, her appearance was healthy, except that her countenance was somewhat pallid. Her pulse was natural as to frequency, but feeble. Her right leg was so disabled that she could not move without the help of a crutch. The sensibility of this limb was not diminished, but no evidence of hyper-æsthesia, or unnaturally exalted sensibility, was ob-

served. In the left leg the power of motion was not at all lessened, but sensibility was entirely abolished. She experienced no sensation when it was touched, or when it was pierced by a pin, or pinched.

The following treatment was prescribed :

R.—Tr. cantharid., gtt. xx.—morning, noon and night.

R.—Ferri et potassæ tartrat. ʒij; aquæ cinnamomi ʒj; aquæ destill. ʒv—M.—Dose, a table-spoonful three times daily, after each meal.

In addition to these means, galvanic electricity was directed to be applied every morning to her lower extremities.

This treatment was continued till November 4, when she left the house. It had produced a very decided improvement in her condition. Her complexion was better, and her pulse stronger without being more frequent. For some weeks before she went out, she had been able to walk with but little difficulty. There was also a marked increase in the sensibility of her left leg, though it was still imperfect. The two points of a pair of dividers, separated an inch from each other and applied to the surface, were felt as only one; when separated a quarter of an inch further, both points were distinctly felt.

The only circumstance of interest in this case is the difference in the form of the paralysis in the two limbs which were affected—that in the one sensibility alone was impaired, in the other only the power of motion.

Cases presenting this remarkable peculiarity, are probably of not very frequent occurrence. They are unnoticed by many of the authors who have written most extensively on the subject of paralysis. Yet they have not entirely escaped attention. They are mentioned by Ramazzini, by Senac, by Heister, and perhaps by some few other writers.

Ramazzini states that he had seen a patient whose right leg had lost its sensibility but retained its power of motion, while the other leg had lost its power of motion, but retained its sensibility.*

* De Morbis Artificum Distriba, p. 286, Mutinæ, 1670.

In the instance which had fallen under the observation of Senac, the patient had lost the power of motion in one arm without impairment of the sensibility of the limb, while in the other arm sensibility was abolished, but the power of motion unaffected.*

The case related by Heister is given more in detail. "A man," he says, "upon whom I had operated for cataract presented, among several other diseases from which he was suffering, one that was not a little extraordinary. He had lost nearly all power of motion in his right arm; the limb hung from his shoulder as an useless weight; but its sensibility was perfectly natural. In his right foot the motor power was in some degree impaired; this foot was less under his control than the other; but yet he was able to walk. In the left arm and left foot the power of motion was perfect; but—what appeared wonderful—these limbs were wholly destitute of sensibility. So entirely was this faculty suppressed, that not only was he unable to distinguish objects by touching them with his left hand, but when the limbs of the left side were immersed first in hot and afterwards in cold water, he could perceive no difference in the temperature of the fluids. Neither fire, nor boiling water, nor the utmost intensity of cold, excited in them any painful sensation. Their integuments might be pierced with needles, lacerated, or injured in any other manner, without the occurrence of pain. I observed, also, that when he chanced to be wounds near the nail of the left thumb by a thorn, he suffered no uneasiness, and the wound was speedily healed."†

The most interesting question in relation to such cases of paralysis is respecting their proximate cause, or the nature and situation of the lesion on which they depend.

Heister endeavors to explain the character of his case by supposing that there are certain nerves which terminate

* De la Structure de Cœur, tom. ii. p. 291.

† Observatio Laurentii Heister de Cataracta et de Mira Paralysi. Naturæ Curiosorum Ephemeridum Centuria Secunda, p. 480. Francofurti et Lipsiæ, 1712.

wholly or principally in the skin, and endow that tissue with its faculties as the instrument of touch, while there are other nerves which supply the muscles and constitute them the organs of motion; and that when the former of these are injured, sensibility is affected; when the latter, the power of motion. Why the one class of nerves happened to be affected in the right limbs, and the other in the left, he has not attempted to show.

The researches of modern physiologists, especially of Sir Charles Bell and Müller, have established the doctrine—as every one knows—that the anterior root of each spinal nerve is motor, and the posterior sensory. Now it may be said that paralysis of motor power on one side, and of sensibility on the other, might arise from injury on the one side to the anterior, and on the opposite side to the posterior roots of the nerves. But it seems infinitely improbable that the effects of disease are ever so extensive as to involve all, or many, of the nerves which supply the upper or lower extremities, or any other considerable portion of both sides of the body, and at the same time so nicely and exactly limited as to be confined exclusively on the one side to the anterior, and on the other side to the posterior roots.

The most satisfactory explanation of the cases in question appears to be furnished by some of the recent discoveries of Dr. Brown-Séquard in relation to the functions of the nervous system.

The experiments of this distinguished physiologist have proved that the spinal cord has a crossed action in transmitting sensory, as well as motor, impulses. They have shown that the sensory—not less than the motor—fibres cross from one side of the cord to the other. But the crossing of the sensory fibres does not take place, like that of the motor, in the medulla oblongata alone; on the contrary, it occurs throughout the entire length of the cord. The sensory fibres from each side of the body, on entering the corresponding lateral half of the spinal cord, almost immediately cross over to the opposite lateral half, and along that half they pass up

to the brain. Each lateral half of the cord contains efferent or motor fibres which convey the mandates of the brain to the muscles of the corresponding side. Each lateral half also contains afferent or sensory fibres which carry up to the brain the impressions of common sensation; but, contrary to the opinion currently entertained by physiologists, they carry these impressions not from the corresponding, but from the opposite side of the body.

The decussation of the sensory fibres cannot be demonstrated anatomically; but the evidence of its existence is, nevertheless, abundant and conclusive. It has been fully proved by numerous experiments on living animals.

A transverse section of either lateral half of the cord occasions, in all cases, complete paralysis of *motor power* in the *corresponding* side of the body below the point of section. This fact has long been known; but Dr. Brown-Séquard has discovered, what was not before known or suspected, that such a section occasions equally complete paralysis of *sensibility* in the *opposite* side. Such a section prevents the influence of the brain from being transmitted to those parts of the corresponding side of the body which are supplied with efferent or motor nerves from below the injury; and it equally prevents the impressions of sensation excited in the opposite side of the body from being carried up to the brain by the afferent or sensory nerves of that side.

The decussation of the sensory fibres is further proved by the effects which occur when a longitudinal section of the cord is made in such a manner as to separate its two lateral halves from each other. The results of this operation are perfectly in accordance with those produced by the transverse section. The power of voluntary motion in those parts of the body supplied with nerves from the portion of the cord that has been longitudinally divided, is but little, if at all, affected. Sensibility, on the contrary, is, in those parts, wholly abolished on both sides of the body. The conclusion appears inevitable that the operation has destroyed the continuity of

the conductors which convey sensory impressions from each lateral half of the body to the opposite side of the cord.

With the light afforded by the researches of Dr. Brown-Séquard, we can readily understand in what manner the cases of paralysis which we have been considering may be occasioned; and we can also understand why they occur so rarely. They, probably, arise from injury inflicted upon some portion of one lateral half of the spinal cord, as by the pressure of a tumor, by congestion or effusion of blood, or by the changes caused by inflammation. And they occur rarely, because almost all the accidents that can befall the cord are, from their nature, far more apt to affect both its lateral halves than either one of them alone.

ART. II.—*Synopsis of a Case of Ovarian Dropsy—Ovariectomy successful.* By B. ROEMER, M. D., Otter Bridge, Va.

THE operation of ovariectomy has especially of late become a theme of much controversy in both hemispheres. France and England take the lead in denouncing the American practitioner, styling the surgical proceedings “une audace Americaine,” and “mirabile dictu!” while the rest of the continental debaters rank themselves anywhere and everywhere, objections, too ludicrous, are advanced by acknowledged leaders: Malgaigne baptizes the operation as being “too radical,” “securing women too unconditionally against relapse.” Piorry admits the rationality of the operation, but (saltus Æsopi!) leaves “the audacity of the operation to other hands (heads?) than his own.” Cruveilhier declares ovariectomy to be “outside of science,” going a step further than Bonetus of old, whose Catonic “noli tangere” affected his school for years, and endorsing the afterwards recanted statement of Van der Haar, that “the idea of an entire removal of an ovarian cyst, was, like Tantalus, surrounded with water, yet famished with thirst.” Sir

C. Bell, Liston, Seymour, W. Hunter, Druitt and others, are candid in their objections, and have, in their objections, *advanced* the justification of ovariectomy. Statistics are fast accumulating, from Delaporte, Aumonier de Rouen, down to Lizars, Martini, Dieffenbach, v. Siebold, Childs, Cazeau, who nobly redeems the position of French surgery, (Bulletin de l'Academie Imp. de Méd., December, 1856), Clay, Lane, Tanner, J. B. Brown, F. Churchill, H. Miller, J. W. Hamilton, etc. Logic and science stand in defence of ovariectomy, under such circumstances as would warrant any other operation in analogy. It is for this reason alone, to add in a fair statement of facts another voice in favor of the affirmative side, that I propose to give in the following a sketch of a case of ovarian dropsy subjected to ovariectomy.

Visited Mrs. L. on October 25, 1858. Age, 38 years; was married eight years, and gave birth to six children, now living, the youngest three years old. Two or three months after her last accouchement, June, '55, she felt slight uneasiness in the side, and subsequently an enlargement. On examination found the abdomen of the size of a full nine months' gestation, hard to the touch; on pressure, a peculiar sound was produced, similar to that of walking on well crystallized snow. A large tumor occupied the whole pelvic cavity, pressing against the diaphragm, where the known line of demarcation was well formed, producing dyspnœa. A secondary enlargement was discovered to be adherent; diagnosticated only slight adhesions; catamenia regular; there exists a periodic monthly exacerbation, the mass enlarging somewhat and afterwards resuming its former size. Exam. per vaginam: uterus depressed, as in situ; the bowels and bladder act; fluctuation indistinct. The diagnosis resulted in encysted (ovarian) dropsy, perhaps multilocular, with slight adhesions, if any. Advised preparations of iodine, hydr. protiod., bandaging, etc., and directed her attention to ovariectomy as the only reliable course for radical cure. Received, on Dec. 5th, a letter informing me of the non-success of the treatment, and of the increasing symptoms towards a fatal issue. Was requested to appoint a day for the operation.

Was met, on Dec. 9, by Drs. Withers, Ward and Dillard. The catamenia being present, I postponed until the 12th, on which day I proceeded to the operation, in presence of Drs. Adams and Hewitt, in addition to the above named gentlemen.

Rectum and bladder emptied. Chloroform was administered by Dr. Withers, of Leesville, to whom I express here my sincere thanks for his valuable assistance. I commenced with an exploring incision, five inches in length, along the linea alba, and below the umbilicus, laying the cyst bare. No adhesions within reach of the index, cyst not vascular. Partial excision discarded for reasons hereafter to be assigned. Emptied the cyst with lancet and metallic catheter, of which the eyes were enlarged. The contents were of a dark brown color, of the consistency of molasses, and mixed with but few debris of mucous matter. Amount of liquid four gallons. The cyst having collapsed but imperfectly, a second cyst was suspected, but on examination two internal tumors were discovered, for the passage of which the primary incision was enlarged two inches to the right of the umbilicus. The whole tumor was then extravasated, whose pedicle was $2\frac{1}{2}$ inches wide, $1\frac{1}{2}$ inch thick, and about 8 inches in length. A double ligature of twine was placed through the centre of the pedicle, an inch from the cyst, and tied to the right and left. A third ligature was laid above the former and the mass divided. An assistant holding the pedicle, the wound was closed (the left ovary having been found healthy), and the ligated end secured with a director* at right angles with the axis of the body. A many-tailed bandage was secured around the abdomen, together with the usual adhesive and water dressing. The patient recovered well from the effects of chloroform; vomited once during the operation. Had opium, grs. ij. I omit farther treatment, and only state that the catheter was used for five days, after which the bladder acted sua sponte. The bowels were moved on the sixth day. Removed the upper and lower sutures on ninth, the next two on the thirteenth day; the intermediate silver sutures

* The liability of its oxydizing renders a stylus of silver, glass, etc., preferable.

on December 26, and the ligatures of the pedicle on January 2d, 1859, (the pedicle was destroyed by suppuration, and the abdominal walls had united around it, leaving a small sinus of the size of the ligature, which closed during the next week). The patient recovered without any symptoms of inflammation, etc., and was allowed to sit up on January 19th; visited her relations, at a distance of 14 miles, during the middle of March.

Remarks.—The extravasation of the contents of the cyst having proved in another similar case a serious inconvenience, more or less of the liquid escaping into the cavity, I devised a simple apparatus in order to obviate this difficulty. A piece of soft pine, six inches by eight, is grooved out in one or more channels; the end destined to be pressed against the cyst is narrowed and curved in, to suit the convexity of the tumor. When in use, place a few layers of short lint along the upper edge close to the cyst, in order to establish suction. I have all reasons to be satisfied with such an instrument. I used Brown's many-tailed bandages, secured in front with elastic splits.

Cyst.—Its weight with contents was twenty-five pounds. On opening it, two internal cystic tumors were found; one, eight inches in demi-circumference, near the insertion of the pedicle, and the other, somewhat smaller, opposite to the first. Their cysts contained a yellowish waxy matter, and their walls had, in common with the cystic tumor, two lining membranes.

The formation of these secondary cysts seems to me to forbid partial excision, since a future development of one or more secondary cysts is probable. Their supply of blood is sufficient for their growth, even under unfavorable circumstances, i. e. pressure and determination of unhealthy action in another direction. The removal of that pressure after evacuation of the liquid, and the checked or altered condition of the cyst itself, may effect a radical cure of the disease attacked, and beget another of like or more malignant character. In this statement I find myself supported by many authors.

Dr. Hodgkin, in his work on the "Morbid Anatomy of Serous Membranes," says, "that the formation of multilocular ovarian tumors is explained by the internal cell-growths of smaller cysts, as if by a process of internal gemmation."

Mr. Paget speaks of these growths as a process of endogenesis.

Dr. Lee regards these secondary cysts as containing similar fluid, having the same structure, bearing the same relation to one another, and having evidently been formed independently of each other.

J. B. Brown, in his work on "Some Diseases of Women admitting of Surgical Treatment," says: "In a congeries of cysts much mutual pressure is exerted; and from activity of secretion in some, whether by inflammatory action or not, such compression may follow as to cut off the supply of blood to others, and so arrest their growth. This is illustrated where one cyst appears to grow at the expense of another." Page 163. And again:

"Where other cysts form externally to a principal one, they frequently feel like hard appended tumors, from being but partially developed. The growth of such seems frequently to be only arrested; for, on the subsidence, by tapping or otherwise, of the large one, they will at once increase." Page 162.

We dismiss this subject without further comment, but leave it to the consideration of the careful surgeon.

In conclusion, we would call the attention of the practitioner to a few points of recent investigation respecting the diagnosis of ovarian tumors.

Dr. G. Valentin, in his text-book on *Physiology of Man*,* says (I give the translation), that the epithelium motion (*Flimmerbewegung*) of the female organ of generation commences at the labia majora, continues over the surface of the vagina, uterus, etc., to the ovarium. "Two phenomena demand our attention: this motion (of the microscopic hairs

* Dr. G. Valentin's *Lehrbuch der Physiologie des Menschen*, etc., volume 2d, part 1st, page 23, No. 1977, and page 36, No. 2024, and note.

covering the free surface of some epithelial cells) is wanting in undeveloped females (i. e. when quite young), ceases with the catamenia and during pregnancy, and is absent during diseases of the ovaries, Fallopian tubes and uterus." And again :

"Diseased secretions of the uterus, dropsical effusion of the tubes and ovaries, and out-growths in the cavity of the uterus, destroy the epithelial motion." Considering the difficulty of deciding between encysted dropsy of the ovaries and encysted dropsies of other attachment, and the comparatively easy diagnosis between ovarian dropsy and diseases of the uterus, etc., the physician would do well to pay due attention to the facts elucidated.

I refer again to the monthly exacerbations of ovarian tumors, alluded to in the context, having noticed similar symptoms in two other cases. The writer does not regard these periodic changes of pathognomonic importance,—the paucity of cases referred to forbidding such a deduction,—but he considers them of sufficient importance to direct the attention of the practitioner to them, in order to arrive at a proper conclusion through varied observations. The symptoms were as follows :

1. In cases where the cyst presented a hard and but little fluctuating tumor, a considerable relaxation would occur at regular and stated intervals of from two to five days. Endogenic secondary cysts, before not diagnosticated by touch, became tangible.

2. In reversed cases, a contraction would take place, similar to an accidental erectile tumor; dyspnoea augmented; the diaphragmatic ridge marked.

P. S. January 27, 1860.—Doctor Withers, of Leesville, informed me, a few days ago, that he had seen Mrs. L. a few weeks previous to our meeting, on her way to church, two or three miles distant from her home, which distance she walked without inconvenience. Says, "she felt as well as she ever did in her life."

ART. III.—*A new pattern for the Obstetrical Forceps.* By
SAMUEL T. KNIGHT, M. D., of Baltimore.

A HISTORY of the forceps, when completed, from the time of Chamberlin to the present day, would, of course, include the many modifications which have been made in the instruments, in size, in measurements, in form, shape, lock, &c. Those who have access to a sufficient library will find but little difficulty in tracing and arranging these modifications. Some of them are radical, while others, to a superficial observer, might seem trivial and unimportant. Those physicians who have been engaged in difficult instrumental operations can fully appreciate the value of an apparently minute alteration in an instrument where *every fraction of a line of space* is of the greatest importance.

If the alterations about to be proposed are based upon sound mechanical principles, and embrace pathological as well as physiological conditions, their importance and value, upon consideration, will be appreciated by the profession in proportion as they appeal to logic and stand the test of experience.

Dr. William Smellie's short forceps were in almost universal use in this country until within the last fifteen years. They were found by the instrument makers to have the most ready sale, and were offered to the young graduates when commencing practice. Being *short* (as the name indicates) and straight, they were insufficient for operations above the brim of the pelvis, and, therefore, the obstetrical surgeon was obliged to supply himself, in order to meet every emergency, with the French or Baudeloque's long forceps.

About the time referred to, an American modification was introduced to the profession, and highly lauded by the different schools. This excellent modification is intended to combine the advantages of the two instruments in one. For this purpose, the handles of the forceps are made longer, and the

pelvic curve of the blades greater, than the forceps of Dr. Smellie.

The instrument makers found that the short forceps were superseded by these improvements, and, therefore, it is fair to assume that the forceps with long handles and large fenestra, according to Dr. Hodge's measurements, with slight modifications, and known as Dr. Hodge's or Davis' forceps, are those in common use throughout this country. This is the fact, at least, for Baltimore and the surrounding neighborhood.

The forceps about to be described will be compared only with these. They were manufactured by Friese & Co., No. 142 Fayette street, Baltimore. The improvements consist—1st, in the lesser pelvic curve (see plate); 2d, in the absence of fenestra; 3d, in the smallness of the blades; 4th, in the gradual taper from the handles to the blades; 5th, in the greater convexity of the blades, especially near their terminations; and, 6th, in the narrowness of the blades, rendering their introduction a simpler operation.

The objections to Davis' or Hodge's forceps (as they are variously termed), offered for sale by the instrument makers, and the only ones now kept as stock on hand by them, are—1st. The pelvic curve is greater than necessary, according to the laws of mechanics. 2d. The suddenness of the curve, with the fenestra beyond, demands too great an amount of metal at the point of curvature. This is the precise spot where the greatest volume of the head is brought in contact with the perineum, when these instruments are used in extracting, and by this abrupt tension endangers, one might almost say insures, in unskillful hands, the rupture of this part. 3d. The large size of the fenestra allows too free a protrusion of the foetal cranium through them. By this bulging of the cranium, the biparietal diameter of the foetal head is but little reduced. 4th. The fenestra increases the breadth of the blades more than is convenient or necessary, particularly in many pathological conditions for which the forceps are especially applicable.

Measurements of Hodge's Forceps.

Whole length, 16 inches.
 Weight, 1 lb. 1 oz.
 From joint to end of handle, 6·8.
 Length of parallel shank, 3·5.
 Length of proper blade, direct line, 6.
 Breadth of blade at broadest part, 1·8.
 Perpendicular elevation of points of blades where the instrument is laid on a horizontal surface, is 3·4, which indicates the degree of curvature of the blades.
 Breadth of fenestra, 1·1.

Measurements of Knight's Forceps.

Whole length, 14½ inches.
 Weight, 16 oz.
 From joint to end of handle, 6¾ in.
 Length of parallel shank, 3.
 Length of proper blade, direct line, 6.
 Breadth of blade at broadest part, 1½.
 Perpendicular elevation of points of blades where the instrument is laid on a horizontal surface, is 2½, which indicates the degree of curvature of the blades.
 No fenestra.

Those who have constructed the forceps, by taking a cast of the curve of the bones of the pelvis denuded of the soft parts, have seized a physiological, but not a pathological, idea. The difference of the axis of the outlets of the recent and of the bony pelvis is known to all obstetrical students. Nothing can be more false, therefore, than to adapt the pelvic curve of the forceps to the axis of the cavity of the bony pelvis and its outlet. The position of the patient during the operation must also be taken into consideration. Were it required to operate whilst the patient was in horizontal position, stretched upon the plane of a bed, the pelvic curvature of the forceps would have to be increased. But, in the proper position for the application, the depression of the handles of the instrument easily compensates for the curve in the blades. It must be granted that the straighter the blades, the greater the mechanical advantage and the increased certainty of action. This is particularly manifest at the point of outlet over the perineum. When the curvature of the blades is great and sudden, a sufficient elevation of the handles cannot be obtained by the operator with proper mechanical effect. The danger to the perineum, from the curvature of the blades and their sudden springing from the handles, is not the only objection to the physiological forceps of the learned professor of the University of Pennsylvania. The fenestra are not only useless, but injurious. They weaken the blades and render them more likely to slip, and, when they slip, they tear and mutilate the foetal scalp. Moreover, the protrusion of the soft

parts through them increases the resistance more than the polished metallic surfaces of the plain blades. When the forceps with plain blades, according to the measurements given, are properly applied, it is impossible for them to slip. They grasp the head accurately, and the strength of the blades makes good their position. The proper force to be used is, therefore, more easily estimated by and is entirely under the control of the operator. The fenestra weaken the blades, rendering them, to a certain degree, flexible and elastic, often times yielding before a resistance, both justifiable and necessary to accomplish the end in view.

The breadth of the blade of the plain forceps and the moulded convexity of their interior face, which adapt them accurately to the arch of the cranium, entirely prevents any cutting or mutilating of the foetal scalp. In no operation, when they have been used, has the print of their application been left. In the gradual taper from the handles to the blades, they approach more nearly to Dr. Smellie's forceps, and at this point give a decided advantage.

"Hundreds of modifications," says Cazeaux, "have been proposed in the forceps since the days of Levret and Smellie, nearly all of which have fallen into oblivion. Some of them were quite ingenious, but they imperfectly attained the end their authors had in view, and others were nearly destitute of value or utility." The present article would not have been penned were it not for the honest conviction, obtained by a sad experience, that it were better for suffering females that those now in common use throughout this country should *also fall into oblivion*. The particular faults in their construction have been pointed out, and it is to remedy these that the present instrument is offered.

ART. IV.—*Case of Strangulated Congenital Hernia, in an Infant three months old, relieved without an operation.*
Reported by HUGH STOCKDELL, M. D., Petersburg, Va.

ON the evening of Monday, March 5th, 1860, I was called to see a child of Mr. G. B. J——, of this city. Upon inquiry into the history of the case, the parents informed me that he had been subject to *double hernia* ever since his birth, the intestine occasionally descending through the inguinal canal of first one side and then the other, but heretofore giving rise to no serious inconvenience. Examination disclosed a firm irreducible tumor, occupying the inguinal canal, and extending into the scrotum of the right side, which, it seems, had been observed since Saturday night, in connection with constipation, colicky pains, and, more recently, excessive nausea, with vomiting of bilious and fecal matter. As the most careful and gentle manipulation only served to aggravate the distress of the little patient, which was already extreme, I determined, after consultation with Dr. Gholson, (who was present, having, in my absence, been called to the case), to place it, preparatory to the operation of *taxis*, under the influence of a full anodyne enema, followed by a warm bath.

Tuesday, 3 P. M.—Every effort having been made up to this time to overcome the strangulation under the relaxing influences of anodyne enemata, hot fomentations and hot baths, in connection with *taxis*, without relief, it was decided, in consultation with Dr. Gholson, to press upon the family the importance of placing the child under the influence of an *anæsthetic*, to which objections had been made in the earlier course of the treatment. After much hesitation and delay, we obtained their consent, and proceeded to administer cautiously, by inhalation, a mixture composed of six parts of sulphuric ether to one of chloroform. The inhalation was continued nearly one hour, during which time the *taxis* was fully and freely, but again ineffectually, used, when nervous symptoms supervening, either in consequence of the remedy

or the protracted taxis, such as restlessness, jactitation of the extremities, with subsultus tendinum, the anæsthetic was discontinued, leaving the child, in the course of half hour, in statu quo.

Wednesday, 9 A. M. Symptoms becoming more unfavorable and apparently progressing towards a fatal termination—constipation, stercoraceous vomiting, tympanitic and swollen abdomen, spasmodic movements of the tongue, mouth and facial muscles, and considerable febrile excitement. *The operation* which had been previously proposed and rejected, was now urged as offering in our opinion, the best, and almost the only, hope of relief to the little sufferer. This was promptly declined by the family, however, and we immediately resorted to the use of *tobacco*, as a relaxing agent. A tobacco leaf was procured and, thoroughly moistened with warm water, applied to the whole abdominal parietes. At 1 o'clock, its effects being only slightly perceptible in the pulse—the abdominal distension remaining unchanged—it was removed, and flannel cloths wrung out of a very strong, hot infusion of tobacco, directed to be applied in its stead, and frequently changed. At 5 P. M. discovered partial relaxation of the abdominal walls; made a gentle effort to return the protrusion, without success; directed the tobacco fomentations to be continued. The patient now presented the symptoms of *peritonitis*; pulse very frequent and quick; skin hot, more especially over the abdomen, where it amounted almost to *calor mordicans* and decubitus. These, with ugly cerebral symptoms, considered in conjunction with the length of time this state of things had existed, and the emaciated appearance of the child, rendered the case, in my judgment, desperate in the extreme, and, in any event, *almost* hopeless.

About 7 P. M., I was called in haste, and, on arrival, had the satisfaction to find the hernia reduced, and that an evacuation had immediately followed. Others occurred during my visit. Belly relaxed, but tender and unnaturally hot. Cerebral symptoms aggravated. Dr. Gholson being present, we ordered warm fomentations of vinegar and water to be applied

and kept to the abdomen during the night, and the following R: Hydr. chlor. mit., pulv. ipecac. et opii, aa gr. j., ext. hyoscyami gr. ss, sacchar. alb. q. s.; M. in chart. vj. div. One every two or three hours. Under this treatment, and the use of a little Dovers' powder and chalk, which became necessary during the next day or two to check the diarrhœa which ensued, the child was rapidly restored to its usual health.

Many circumstances contribute to render the case, of which the foregoing is a faithful report, unusually interesting and instructive. Conceding that a surgical operation for strangulated hernia is generally postponed to too late a period, it yet shows, where an operation is out of the question, as in this instance, in which the parents would not consent to it, how a case, apparently desperate, may be relieved by a firm and unyielding perseverance in a *sedative, relaxing* course of treatment. It demonstrates, too, that while chloroform and ether may often fail in such cases, that young and tender infants may, at least, be subjected to their influence with *impunity*, and may happily serve to remove, to some extent, the prejudices against these agents which yet exist in this community. It furnishes, likewise, a marked and striking illustration of the wisdom of a cautious and guarded *prognosis* in all *lesions*, of whatever nature, occurring in children.

TRANSLATIONS AND SELECTIONS.

- I. *On the Mental Peculiarities and Mental Disorders of Childhood.* By CHARLES WEST, M. D., Physician to the Hospital for Sick Children.

GENTLEMEN,—Those of us who have been for some years engaged in the practice of medicine, must be aware of important changes which time has wrought, not only in our powers of observation, but also in the objects to which those powers are directed, and that we now watch minutely many things which, in days past, we were wont to pass by almost without notice. At first, and for a time, we studied diseases, the changes which they wrought in the frame, the symptoms which gave token of their presence, and we did well. We found, however, that in spite of all our care, we often fell into error, especially in the opinion we formed of the probable issue of the case; that according to the different individualities of our patients, the same disease ran an unlike course; that it was widely modified by the habits, occupation, disposition of the sick person; that if we were to avoid mistake, our prognosis and our treatment must often vary, in accordance with other rules than those which can alone be laid down in nosologies. We no longer studied diseases only,—we studied the diseased.

The importance of this two-fold study is not equally recognised by all, and hence it happens that the most successful practitioner of medicine (successful, I mean in a far higher sense than that of being he who makes the largest income,) is by no means always the man of highest scientific attainments, but often the one who, though otherwise inferior, has a more genial character, a livelier sympathy with his fellows; qualities which not merely enhance the personal regard of his patients, but which greatly heighten the real value of his opinions, and lead him, not infrequently, to right conclusions, even when he is unable to assign perfectly satisfactory reasons for them, either to himself or to others.

The strongly-marked individuality of the adult gives constant occasion for the exercise of these qualities, and even they who are the least possessed of them cannot fail to perceive their

importance. In the case of children, however, individuality is far less marked; its influence, therefore, is too often practically ignored, the mental and moral peculiarities of childhood are little thought of, and disease in early life is often looked on as though its course were altogether undisturbed by those influences which in the grown person are recognised by all as having a large share in conducting the patient to death, or in bringing about his recovery.

It is, I think, worth while to look at the child from its mental as well as from its physical side; to see how in its immaturity the mind reacts on the body as well as body on the mind, and to take a hasty glance at the mental peculiarities and mental disorders of childhood.

No one can have watched the sick-bed of the child without being struck by the almost unvarying patience with which its illness is borne, and the extremity of peril from which, apparently in consequence of that patience, a complete recovery takes place. Much, indeed, is no doubt due to the activity of the reparative powers in early life, but much also to the unruffled quiet of the mind. No sorrow for the past, no gloomy foreboding of the future, no remorse, disappointment, nor anxiety depresses the spirits, and enfeebles the vital powers. The prospect of death, even when its approach is realized, and this is not so rare as some may imagine, brings in general but small alarm; it may be from the vagueness of the child's ideas; it may be as the poet says, that in his short life's journey, "the heaven that lies about us in our infancy" has been so much within him, that he recognizes again more clearly than we can do—

" the glories he hath known,
And that imperial palace whence he came."

I refer to this, gentlemen, because the truth is one which has its practical side; because to keep the sick child happy, to remove from it all avoidable causes of alarm, of suffering, of discomfort, to modify our treatment so as to escape a possible struggle with his waywardness; and even, if death seems likely to occur, to look at it from a child's point of view, not from that which our larger understanding of good and evil suggests to our own minds, are duties of the gravest kind, which weigh on the physician, on the parent, on the nurse; and which it behooves us to remember none the less, because they are not dwelt on in the lecture-room, or in the medical treatise.

But not only does the child live in the present far more exclusively than is possible for the adult, but there are besides

other important points of mental difference between the two which have a serious influence on the manifestations of disease, and also on our treatment of it. The mind of the child is not merely feebler in all respects than that of the adult, but in proportion to the feebleness of his reasoning powers, there is an exaggerated activity of his perceptive faculties, a vividness of his imagination. The child lives at first in the external world, as if it were but a part of himself, or he a part of it, and the glad-heartedness which it rejoices us to see is as much a consequence of the vividness with which he realizes the things around him, as of the absence of care to which it is often attributed. This peculiarity shows itself in the dreams of childhood, which exceed in the distinctness of their images those which come in later life, and shows itself too in the frequency with which, even when awake, the active organs perceive unreal sounds, or conjure up at night ocular spectra; and these not merely colors, but distinct shapes, which pass in long procession before the eyes. This power fades away with advancing life, until, except under some condition of disease, the occasional appearance of luminous objects in the dark, remains the only relic of this gift of seeing visions with which, in some slight degree at least, most of us were endowed in our early years. The child who dreads to be alone, and asserts that he hears sounds or perceives objects, is not expressing merely a vague apprehension of some unknown danger, but often tells a literal truth. The sounds have been heard; in the stillness of its nursery, the little one has listened to what seemed a voice calling it; or, in the dark, phantasms have risen before its eyes, and the agony of terror with which it calls for a light, or begs for its mother's presence, betrays an impression far too real to be explained away, or to be suitably met by hard words or by unkind treatment.

Impressions such as these are common in childhood even during health. Disorder, direct or indirect, of the cerebral functions, more commonly the latter, greatly exaggerates them. The minor degrees of somnambulism, such as getting out of bed while asleep, are by no means uncommon in childhood, and even more frequent are those attacks of night-terrors, in which, after a short doze, the child awakes in a state of intense alarm, with the distinct vision before it of some frightful object, which does not disappear for some minutes, and which returns sometimes the same night, sometimes the succeeding one, with just the same appearance as before.

It follows, then, that the circumstances which surround a child, whether in sickness or in health, are of far more importance than are those about the adult; and that their

influence, for good or for harm, is far more powerful, and is never to be lost sight of in the treatment of the diseases of early life.

But while the child lives thus in the present, and while this present is but the reflection of the world around, its impressions uncontrolled by experience, ungoverned by reason, the moral qualities are not in the same undeveloped state as the intellectual powers. The child loves intensely, or dislikes strongly; craves most earnestly for sympathy, clings most tenaciously to the stronger, better, higher, around it, or to what it fancies so; or shrinks in often causeless, but unconquerable dread, from things or persons that have made on it an unpleasant impression. Reason as yet does not govern its caprices, nor the more intelligent selfishness of later years hinder their manifestation. The waywardness of the most willful child is determined by some cause near at hand; and he who loves children and can read their thoughts, will not, in general, be long in discovering their motives and seeing through their conduct.

One word more I have to say with reference to that intense craving for sympathy so characteristic of the child. It is this which often underlies the disposition to exaggerate its ailments, or even to feign such as do not exist, and in which attempts at deception it often persists with almost incredible resolution. Over and over again I have met with instances, both in private and hospital practice, where the motives to such deception were neither the increase of comfort nor the gratification of mere indolence, but the monopolizing the love and sympathy which, during some by-gone illness, had been extended to it, and which it could not bear to share again with its brothers and sisters. This feeling, too, sometimes becomes quite uncontrollable, and the child then needs as much care and as judicious management, both bodily and mental, to bring it back to health, as would be called for in the case of some adult hypochondriac or monomaniac.

These mental peculiarities of early life may seem at first to have little to do with the cure of disease; but in reality you will find that this is not so; but that in proportion as you make them your study, and as you become able in consequence to sympathize more completely with your patient, will your diagnosis in many instances be more accurate, and your treatment more successful.

This brief sketch must suffice for the first part of my subject, and will, I trust, have prepared you for the better examination of the second, namely, the influence of disease upon the mind in early life. This shows itself either in weakening of

the perceptive powers or in altering and perverting the moral faculties. Of these, sometimes the one, sometimes the other, is the more obvious, though it is very rarely that either exists absolutely alone.

As in diseases of the body, so in the affections of the mind in early life, the power of repair furnishes us with a constant ground for hopefulness, which we should be less warranted in indulging in the case of the adult. The dullness, the apathy, the cerebral disturbance, which accompany many of the diseases of early childhood, have therefore by no means so grave an import as we should be compelled to attach to them, if present to the same extent at a more advanced age. The whole of the child's intellectual energy is expended on his commerce with the world around him; his relations to it are disturbed; night terrors, bad dreams, distressful phantasms, betoken this; or the ear is pained by sounds, and the eye by light,—not because the organs of sight or of hearing are specially disordered, or the brain is specially affected; but because, with the limited mental endowments of the child, such are the only ways in which their sympathetic disorder can manifest itself. Or the disease has passed away; the active, intelligent, observant child is left dull, takes no interest in what goes on around him, forgets his prattle, seems scarcely to know the simplest word, though before he spoke fluently. This, again, need not cause too much apprehension. The child's memory is feeble; during the protracted illness, the customary impressions were no longer made upon his senses in the sick-room, or they passed unnoticed in the unconsciousness of fever; so that, when recovery takes place, the lesson has to be learnt again, and learnt with faculties weakened by the by-gone ailment. For this you must be prepared, and prepared also for the very gradual process, extending sometimes over months or years, by which the ground lost is made good again: the time occupied by it being in general all the longer, in proportion as the child was younger when the original attack of illness came on. The infant of eight months old will show for months no ray of dawning intelligence; the little one just beginning to speak, will remain silent for months; while the child of four or five years will generally in a few weeks regain his forgotten lore. Simple as all this seems to be, and really is, it yet is not always borne sufficiently in mind; and these hints may enable you to save your patient's friends from much needless anxiety.

There is a caution, however, not to be lost of sight of in these cases; namely, that protracted illness, even when unaccompanied by evidence of serious disorder of the brain, is sometimes succeeded by permanent impairment of the sense of

hearing, and that the child's dullness may be the result of the loss of the power of receiving impressions, through one most important medium, from the external world.

A little girl, two years and nine months old, was attacked at the age of one year and nine months by what was said to have been inflammation of the lungs, though it is uncertain whether or no a convulsion occurred at its outset. She got well without any other sign of cerebral disturbance having manifested itself. Before the illness, she was beginning to talk, used to call her father, and to say many little words, but since then she had not spoken at all. The question raised was, whether the silence and some strange ways, different from the child's previous manner, were indicative of disease of the brain and of incipient idiocy, or were merely the results of her loss of hearing. I took the child into the hospital for a time to watch her; her intelligent countenance and strangely earnest manner showed almost at once that her intellect was acute enough. A very few days' observation confirmed this impression; the child was dumb because she had become deaf, and her speech had ceased so soon, because the progress she had made at the time when illness first overtook her was so small.

If the same accident occurs somewhat later in life, when the child has learnt to speak pretty well, its nature is more likely to be misunderstood; for the child does not all at once forget to talk, but speaks imperfectly with gradually lessening distinctness; and forgetting first some words, then others, her condition more nearly resembles one of imbecility; and unless special care be taken to test the powers of hearing, error is very likely to be committed. I confess I made this mistake myself in the case of a little girl four years and seven months old, whom I first saw a year after an attack of a somewhat ill-defined febrile character, accompanied by a comatose condition, which lasted for several days, and left her in a state of great weakness. Though she regained strength, it yet was a long time before she tried to speak again; and, when she did, her articulation was very indistinct. In the course of time, she seemed as strong as ever, and her intelligence appeared not deficient, but her utterance grew more and more indistinct; she became flushed, angry and excited, and made inarticulate noises when she could not obtain what she wished, and when I first saw her she had for some time ceased to talk. Her altered temper, her fits of passion, the inarticulate sounds which had taken the place of speech, suggested the idea that idiocy was supervening on the disorder of the brain, which had formed so marked a feature of her illness. In a short time, however, careful observation ascertained that speech had

ceased, because the sense of hearing first had failed, that the case was one for the deaf and dumb school, not for an idiot asylum.

The arrest of development, or the positive retrocession of the mental faculties in childhood may be regarded almost invariably as of far less serious import than any manifest perversion of the moral powers. The child who, in spite of intellectual dullness, attaches itself to those about it, and manifests the ordinary childish feelings, is not one concerning whom there is any occasion to despair, or whom judicious training will not do very much to improve. Several circumstances influence the degree of dulling of the mental powers, and are to be taken into consideration in forming an estimate of the child's condition, and his capabilities of improvement. In proportion as the original illness was accompanied with convulsions or serious cerebral disturbance, will the subsequent impairment of the intellectual powers be profound, and their recovery slow in taking place. In proportion, too, to the early age at which such illness occurred will its results be serious; and this not necessarily owing to the gravity of the mischief, but owing to the low state of attainment to which the child had reached when its further advance was interrupted. Thus, for instance, the apparent obscuration of intellect will be greater if it had overtaken the child before it had learnt to speak, than if it had come on later; and though not the less teachable, yet more will remain to be taught in the former case than in the latter; and a child, perfectly capable of improvement, may be passed over as utterly destitute of all capability of intellectual progress, owing to the age at which disease overtook it not being borne in mind. Lastly, it must be remembered that a very large number of children, whose intellectual progress has been arrested at an early age, are allowed to grow up for years without any culture whatever, and that as much of their apparent dullness may be due to unintentional neglect as to actual disability.

Thus it happened to me, not very long since, to see a little boy, aged six years, the eldest of three children of parents in whose family no other instance of intellectual deficiency had appeared. This little boy had been attacked by convulsions when eight months old, at which time teething was just commencing. These convulsions were not violent; they recurred at intervals for two months, when they ceased; and neither fits nor any other form of cerebral disorder had subsequently appeared. He was left, however, by these attacks unusually dull; and though his bodily development had been uninterrupted, he had never made any attempt to speak. He was

attached to those about him, was cleanly in his habits, decided in his likes and dislikes, was almost always happy; amused and pleased with trifles, but in a state of constant unrest, scarcely quiet for a minute at a time; not to be persuaded to sit down except when thoroughly worn out, and unable to fix his attention on any object whatever. His parents called him a dumb boy, and as such he had been passed over almost without a thought by those who had seen him. I found that his hearing was perfect; I noticed, too, that the sounds he uttered, though inarticulate, were modulated, according to the feelings of which he intended them to be the expression. I said that he was not dumb, that speech would be acquired under judicious teaching; that to fix his attention to simple objects was the first step toward his improvement: that this step gained, ideas would not be long in being followed by words.

He was sent by my advice, in the absence of other means of teaching, for a few hours daily to one of those institutions in which, under the name of the *Kinder-Garten* system, a modification of the Pestalozzian and infant-school system of education is carried out; and here, for the first time in his life, an attempt, and necessarily a very imperfect one, was made at training and teaching. At the end of six weeks he was already much improved. He uttered a few words, and these were associated with ideas, not parrot-like, acquired by mere imitation. That, however, which to my mind was the most satisfactory index of improvement was, that he who before could not be induced to remain quiet for a minute, now sat by his teacher's side for five or ten minutes attending to his instructress. He distinguished colors, selected them according to their name: he plaited sticks, and built with bricks in imitation of patterns; he saw when he had failed, and himself endeavored to rectify his mistake—achievements very humble indeed in comparison with most children of his age; but yet to my thinking a great triumph as the results of the first six weeks of teaching, which (from no want of love or care, but from mere want of knowledge) had ever been expended on the child.

Apart from those instances, almost exclusively congenital, in which arrested development of mind is associated with arrested development of body, where the feeble and misshapen frame forms a fit tenement for the feeble and unformed spirit; where the body seems almost as little alive to physical impressions as the mind is to intellectual perceptions, where the feet refuse to walk, the hands to grasp, and almost the jaws to masticate, where in fact the lowest degree of idiocy is present; I think the state of the moral powers more important as a guide to

our prognosis than the condition of the intellectual. Want of affection, mischief, spite, causeless rage, indicate a state from which recovery is far more hopeless than from mere intellectual dullness ; and more than this, the cases in which such perversion of the moral powers begins to manifest itself, assume at once a far graver aspect than they had before presented ; and in such cases the establishment of moral control is the first step towards mental progress.

This brings me now, in the next place, to remark on some of the mental perversions of children, which come on independently of mere intellectual feebleness ; or, if associated with it, the latter is frequently the consequence of the other, or at any rate succeeds it in point of time. Such phenomena we occasionally observe accompanying the development of epilepsy in childhood ; attacks of fury coming on without obvious cause, neither preceding a fit nor following one.

A boy, aged nine years, was admitted into this hospital in June, 1852, suffering from epilepsy, which had come on causelessly during the preceding year. These fits were sometimes violent, and succeeded by much dullness, at other times they were of short duration, and followed only by slight head-ache. The boy remained in the hospital for about two months, and was then discharged unrelieved. The reason for his dismissal was that he had become liable to occasional seizures of maniacal excitement, in which he attacked the other patients ; besides which if any circumstance displeased him, he not unfrequently stripped himself and walked about the ward naked, and this although usually a perfectly well-conducted child.

A little boy came under my observation at the age of eight years, of whom I learnt the following history. His health was perfectly good until, at the age of three years, he had a fall, which was followed by a violent convulsion, that lasted for sixteen hours ; and a second fall, a year afterwards, was succeeded by another fit ; and ten or twelve more occurred, though with diminishing intensity, during the ensuing twelve months. Afterwards fits took place only about once in six months, and they continued only for two or three minutes, and though accompanied were not followed by unconsciousness. He passed through the diseases of childhood with no impairment of his general health, and went to school, where though backward he learned to read, and was not remarkably duller than other children. At the age of six years, while still weak after a fit, he was taken into the park, and came back in a state of great excitement, running about, throwing things down, though not falling nor having a fit ; and during the continuance of this condition he still went to school, and though regarded as very

naughty and troublesome, his mind was as active as before. His ungovernable disposition, however, led to so many quarrels with his schoolmaster, that at seven years of age he was removed from school; but it was not till more than seven and a-half years old that any marked dulling of his intellect became apparent. He then began to leave off speaking; not articulating indistinctly, and losing by degrees the power of utterance, but apparently intentionally abstaining from speaking, and for two months before I saw him he had not uttered a word, but made signs for whatever he wanted, and became violently excited if these signs were not comprehended. When I saw him he was in a state of restless excitement, moving incessantly, and if left unwatched, either attempting to destroy any object that was within reach, or trying to gratify a propensity to masturbation, to which he had recently become much addicted.

I need not give more details of this case. I referred to it only as exemplifying the way in which perversion of the faculties sometimes precedes their dullness—sometimes exists altogether without it. Between such cases and cases of real idocy the difference is very wide indeed; though, for obvious reasons, not at first so striking as between the insanity and imbecility of the adult. The child whose mind becomes disturbed at a time when his education is still imperfect, his stock of ideas very limited, his experience very small, rapidly retrogrades, forgets his recently-acquired attainments, and, at the age of nine or ten, will be found—if his mental disorder has lasted for a year or two—as destitute of intelligence as the child who from birth had been incapable of education.

These attacks of maniacal excitement and the more acute forms of insanity usually, though not invariably, follow or accompany epileptic attacks; but slight degrees of mental perversion sometimes manifest themselves in early life, which, for want of being understood and properly dealt with, assume with advancing years the character of insanity, and of insanity in its least hopeful forms.

As I have already mentioned, almost all of the mental disorders of early life take the form rather of moral than of intellectual disturbance. Distinct hallucinations, fixed ideas, the various forms of insanity or of monomania, such as appear in the grown person, can hardly occur in the child; but the whole moral equilibrium is sometimes suddenly shaken, by a cause which may perhaps hardly seem equal to the production of so grave a result; or more slowly the temper may alter, the passions grow ungovernable, or the child sink by degrees into the condition of the morbid hypochondriac.

How grave an effect a sudden shock may produce on the nervous system of a young child was shown in the case of a little boy, five years old, who, when in not very good health, was taken, on October 23, to his father's funeral. The strange, sad scene overcame him, he shivered violently, became very sick, complained by signs of pain in the head, but had lost the power of speech, and was unable to protrude his tongue. He was able to swallow, but refused food; he lay listless and indifferent to all surrounding objects, but rested ill at night. On October 26, he was admitted into the hospital, when his expression was dull, his pupils were unnaturally dilated, he could not close his right eye, his mouth was drawn to the left side, and the saliva dribbled from the right corner of his mouth, power over the right arm was impaired, and the head was drawn to the left side. These symptoms did not persist; power over the right side returned by degrees, as did the power of speech, and that of protruding the tongue; but no corresponding improvement took place in his general condition. On October 28, he had for a few hours a gleam of cheerfulness—sat up, and played with toys—but this soon passed away. His days were spent in a drowsy, apathetic condition, varied only by calls for his mother, which did not always cease even when she was by his side; and the nights were, without exception, restless and excited. On November 3, convulsions occurred, and they were followed by deep drowsiness. The drowsiness deepened, the convulsions from time to time returned, and, early on November 7, he died—just sixteen days after his father's funeral. A little fluid in the ventricles of the brain, a little congestion of its vessels, was all that the anatomist could find. I suppose his mother was right. She said he died of a broken heart.

It behoves us to bear in mind that the heart may break or the reason fail under causes which seem to us quite insufficient; that the griefs of childhood may be, in comparison to the child's power of bearing them, as overwhelming as those which break the strong man down. In France during the ten years from 1835 to 1844, 134 children between the ages of 5 and 15, committed suicide, or on the average 19 every year.

"In the greater number of the instances," says M. Durand-Fardel,—to whose researches I am indebted for the figures I have just quoted,—“in which the cause of the suicide of children is mentioned, one sees that they have killed themselves in consequence of punishment, or of reproofs, or of ill-usage. These facts deserve special attention; they prove how much more the susceptibility and sensitiveness of children need to be taken into consideration than is commonly done.”

The lesson which such cases teach is as important for the doctor who tends the child in sickness, as for the teacher who trains him when in health.

But besides cases in which some comparatively sudden impression produces a sudden disturbance of the intellect, there are others in which the process is far slower, though the results are little less serious. Such are the cases in which mental disorder occurs as the result of over-tasking the intellectual powers. This over-work, too, is by no means in all cases due to the parents unwisely urging the child forward, but is often quite voluntary on its part. Sometimes, too, the friends of the child are so alive to this risk, that they limit the hours of work, a precaution which nevertheless often proves inadequate from the want of some due provision for turning the thoughts and energies during play-hours into a perfectly different channel.

In many instances, the neglect of physical health for the sake of mental culture, lays the foundation of grave constitutional disease, and the child dies at a comparatively early age from the supervention of acute hydrocephalus, or sinks under some form or other of the tubercular cachexia. In other cases, however, the body suffers less exclusively, but the whole nervous system seems profoundly shaken, and the moral character of the child is seriously and even permanently injured.

It is well for the child when the over-work produces for a season dullness and inability for further intellectual labor, for then comes, as a matter of necessity, the much-needed repose. In many instances, unfortunately, the power of application continues, and an almost morbid desire of learning takes the place of other feelings; but the temper becomes irritable, the waywardness extreme, self-control so lessened, as to be almost lost, and though affection is felt to its relatives and is often expressed by the child in exaggerated language, yet that affection by no means suffices to restrain the fits of obstinate ill-temper, or of ungovernable passion. Headache is frequently complained of, and an alleged headache is often made the excuse, almost the justification of an outburst of bad humor. Sometimes, too, slight threatenings of epilepsy come on:—a momentary unconsciousness, an unsteady step, a trip of the foot in walking, but even these are often so slight as scarcely to attract the attention of those who deplore the child's altered character. With these changes in its disposition, too, there is often a morbid anxiety with reference to its own health, and the child exaggerating its ailments, alienates the love of those to whom it has become a daily source of anxiety and torment, and thus grows more and more self-involved and less accessible to the kindly influence of others. It is, too, in this morbid

condition of body and mind that the habit of masturbation is not infrequently contracted, and weakens alike the physical powers, the intellectual capacity, and the moral sense. The gradations are almost imperceptible, by which the slighter degrees of mental disorder—arising in these circumstances—pass into a state of confirmed insanity in youth or in adult age. In the boy, fortunately, the changes in external circumstances as he grows older, often save him from progressive deterioration; and restore him at length to usefulness, though often with diminished powers, a feeble body, and a stunted mind. The girl does not enjoy the benefit of any similar changes as she emerges from childhood, and hence, though in her case also the worst issue is not the most common, she yet often remains a nervous and hysterical invalid, unfit to manage a household, unfit to bear children, or to rear them; a creature of whims and fancies, a burden to herself, a trouble to her friends.

Reference has already been made to the disposition, amounting almost to a monomania in some children, to exaggerate the ailments from which they are suffering, or to feign such as have no existence. A morbid craving for sympathy seems to be the main spring of their complaints, and children will put up with scanty fare and painful treatment as long as they can engross attention, and be the centre around which everything in the household turns.

A few months since a little girl was admitted into the hospital in a state of extreme emaciation, who had been ill for nearly twelve months; various hysterical symptoms, the nature of which had been recognized by the Medical man under whose care she had been, having marked the commencement of her ailments. On their subsiding the child had pronounced herself unable to walk, and for seven months had obstinately remained in bed, had eaten little, and had lost flesh and strength together, till she was brought here as a case of almost hopeless paralysis by her mother. "Put her down," I said to her mother, "and let me see her stand." "Oh, sir! she has not put a foot to the ground for seven months." The order was repeated, the child obeyed the unwonted tone of command, and stood. "Now walk!"—again a remonstrance, but she walked. She was admitted into the hospital, and the first surprise over, she reiterated her statement of inability to walk. She could not take food, she said, and for some time had to be watched at every meal, and fed almost like an infant. Self had occupied all her thoughts; to call her out of herself, to induce her to occupy herself, bribes and promises and threats were tried by turns. By degrees she was got to stand, and no support being left within reach she kept standing rather than

fall upon the floor, and then she walked to the nearest object against which to rest herself. She gained flesh and strength when proper nourishment was not only supplied, but when she was compelled to partake of it. Her mother's visits by my desire became few and brief; good-humored raillery and the occasional jokes of her fellow-patients took the place of the too-ready sympathy which she had received at home, while praise and rewards followed every attempt to do as she was desired. At last, in the course of some two months, she ate and drank, she walked, and employed herself much like other children, except that she still persisted in bending her back almost double, save when under apprehension of galvanism to the spine which she greatly dreaded, and to avoid which she would sometimes walk about almost as upright as another child. She was sent into the country about a month ago, and having vainly attempted to deceive the intelligent person who has charge of her, holds herself upright, and seems to have given up all pretence of illness.

It would be easy to multiply instances of these feigned diseases in children. I have referred to them not merely because it is of importance to avoid being misled by them, but rather because they illustrate one phase of mental disorder which is not very rare, and which can be corrected only by much care, much gentleness and patience.

II. *Lectures on Experimental Pathology and Operative Physiology*, delivered at the College of France, during the Winter Session 1859-60, by M. CLAUDE BERNARD, Member of the French Institute; Professor of General Physiology at the Faculty of Science.

GENTLEMEN,—Our constant purpose in the preceding lectures has been to exhibit in the strongest light, the intimate connexions which subsist between Physiology and Pathology, and to establish, as far as it lay in our power, that all the phenomena which take place in the living body, whether in health or in disease, are, in almost every case, capable of being rationally interpreted, and distinctly traced back to the action of those laws which regulate the vital functions, both in the normal state, and in its various deviations.

We learn, however, from daily experience, that whatever

their general effects may be, the causes of disease are far from acting with equal intensity upon the various individuals who are exposed to their influence. Cold, hunger, thirst, fatigue and moral suffering;—are not these the constantly-recurring causes of sickness? and are they not, in some measure, the lot of the whole species? How, then, does it occur, that among those who daily undergo their action, certain individuals are found to give way, while others resist? and, when epidemics are raging in given localities, how does it occur that some persons only are effected with the prevailing distemper, while others who live in constant communication with the victims escape unharmed? To the mysterious power which thus modifies, in each particular case, the influence of external agents, we give the name of *Idiosyncrasy*.

We may, I believe, take it for granted, that not only morbid, but also physiological predispositions exist in man as well as in the lower animals: even in a perfect state of health each individual retains his own peculiar habit of body, and is, in consequence, more liable to certain accidents than his neighbor. The various animals which serve for our experiments are far from exhibiting the same phenomena, under the influence of agents entirely similar in their nature. You are already aware that as we rise or descend in the scale of being we find animals endowed with different degrees of sensibility to the action of certain poisons—those, for instance, which operate more especially on the nervous system. There exist, therefore, within the limits of health considerable differences between living beings; and, as we have previously established, these various properties are not merely the result of organization, but frequently depend on the condition in which the animal has been placed. In this manner, as we have already seen, a rabbit may be brought down to the level of a batrachian; and, by reversing the experiment, the inverse result may be obtained. Now, these important modifications are almost invariably produced through the agency of the nervous system.

Not only do the various species of animals differ in this respect; but even individuals belonging to the *same* species are so far from resembling each other, that they cannot be submitted to the same experiments. So exquisite is the nervous sensibility of dogs of the higher breed, that the slightest operations bring on fever, and are attended with alarming symptoms; they cannot, therefore, be employed in researches connected with the gastric juice, the pancreatic secretion, etc.; in fact, all operations performed within the abdominal cavity are liable to superinduce peritonitis in these highly sensitive

animals, and generally prove fatal. In dogs of a more vulgar class, how different are the results of similar experiments! During the operation, the animal hardly attempts to move, and scarcely seems to suffer; the appetite remains unimpaired, and the secretions normal; in short, the various functions of the economy pursue their natural course.

In the horse these differences are, if possible, still more strongly marked. The characteristics of certain breeds are, in colloquial language, attributed to blood; it would be more correct to attribute them to nerves; an irritable, sensitive, and highly organized nervous system is, in fact, the essential difference which separates a race-horse from one of those diminutive half-wild ponies which hilly countries so abundantly produce. Would not the results of the same experiment be entirely at variance in these different animals? and what comparison could we possibly establish between them? It is, therefore, indispensable whenever great powers of endurance are required for the purposes of scientific research, to select an animal of the lower breed; if, on the contrary, sensitiveness and nervous irritability appear desirable, none but the nobler kinds will afford the requisite qualities. Experiments on recurrent sensibility, for instance, which, in the greyhound and pointer, are generally successful, if tried on a shepherd's dog would fail in almost every case. Cold-blooded animals stand, of course, in this respect, at the very bottom of the scale. It will, therefore, easily be conceived, that a state which in certain animals would constitute actual disease, may be perfectly natural in others.

The difference between individuals may be naturally expected to be far more extensive in man, than in all other living beings; and, if we might venture to allude to a subject which actually occupies the public attention, is not hypnotism a peculiar state, which can only be superinduced in a small number of highly sensitive and nervous patients? and do not all the phenomena of mesmerism, somnambulism, and similar nervous symptoms, fall under the same general rule? It is, therefore, evident that idiosyncrasies are only peculiar susceptibilities which exist, in the normal state, in various individuals.

Up to this moment, however, we have only examined physiological and innate predispositions, so to speak; but, as medical men, we are far more deeply interested in the investigation of accidental, transitory, and morbid idiosyncrasies. To ascertain the circumstances which may be supposed to give them birth, is, to the physiologist, a most important object of research.

If we compare an animal in a state of abstinence to one in

full digestion, the most evident discrepancies will be noticed in the results of experiments simultaneously performed upon them. A dose of strychnia which almost immediately kills the second, will not act before a certain lapse of time upon the first. The powers of absorption have, of course, been called into account for so remarkable a fact, but we are aware that absorption, in a state of abstinence, is more active by far than during the process of digestion; the explanation is therefore unsatisfactory. The lowering of the physiological activity of the nervous system is, in reality, the only cause to which the difference can possibly be referred. When deprived of food, the animal gradually sinks in the scale, and acquires properties altogether foreign to its previous state. Is this a morbid condition? No; but the natural result of a well-known physiological process.

We, therefore, entirely deny the existence of a so-called Morbid Physiology, if by this expression a state of things entirely independent of the ordinary laws of life, is to be understood. Such expressions ought to be expunged from the book of science; they only serve to render our notions confused, and lead the student astray. When speaking of Medical Chemistry, for instance, we do not pretend to say that the chemical actions which take place within the living body are totally distinct from those observed without. Morbid physiology has, no doubt, its laws; but they are precisely the same as those which regulate, in the healthy state, the vital functions.

Not only abstinence, but cold and various other causes, modify the conditions of life, and alter the results of our vivisections; under a low temperature, cold-blooded animals grow less sensible to the action of certain poisons; a larger dose of strychnia is required to kill a frog in winter than in summer. But chloroform, ether, and even more ordinary inebriation produce similar results; and, in America, it appears to be generally understood that intoxication is a preservative against the bite of the rattlesnake.

These, however, are the physiological modifications of the system. Our purpose is to investigate those which pertain to the morbid state. It is a well-ascertained fact that medicines do not act on sick people in the same manner as on persons in the full enjoyment of health. Now, the biological conditions superinduced by disease evidently lie at the root of these irregularities. To adduce a well-known instance of this, wine, brandy and ardent spirits—so freely used by certain American physicians in the treatment of low fevers, remain apparently without effect on the patient, even when administered in quan-

tities which, in a state of health, would inevitably produce intoxication. A two-fold explanation of the fact presents itself—Firstly, the process of absorption is almost entirely suspended; secondly, the nervous system is strongly depressed. You are, of course, aware that, in cases of typhoid fever, the absorbent powers lie dormant for a long space of time; a fact established by the following experiment: If small quantities of prussiate of potash are dissolved in the patient's drinks, no vestige of this substance is discovered in the urine, or in any other secretion. A similar state of things may be physiologically superinduced; for where secretion is over-excited, absorbent surfaces lose their properties. The inner surface of the salivary gland, which, in a state of rest, rapidly absorbs strychnia or woorara, ceases in some measure to do so when secretion is going on. Five cubic centimetres (one-third of a cubic inch) of an aqueous solution, containing one-hundredth part of strychnia, being injected into the parotid duct in a dog, the animal was almost instantaneously killed. The same experiment being tried on another, in which secretion was kept up by means of galvanism, life was protracted for the space of twelve minutes. Cholera is evidently another instance of the same fact. No substance whatever is absorbed by the intestinal walls, as long as this abundant and characteristic serous discharge continues. But disease, it will be said, is the origin of all these modifications. True; but a physiological process takes place under its influence, and the facts observed are its natural results.

The deficiency of the absorbent power has equally been found to exist under circumstances entirely different from those we have just examined. It occurs, for instance, in mania. Nervous influence here appears to be the sole agent; for, as soon as the acute crisis is past, the process of absorption recommences, as in the healthy state.

Woorara has been used of late in the treatment of tetanus. Out of four cases two have recovered—the other two died; but, in both the successful cases, the ordinary—or, so to speak, the physiological—effects of the poison had been produced; while, in the other two patients, no such result was obtained. Doubtless some peculiar conditions of the nervous system, rendering all impregnation impossible, existed in these two latter cases; perhaps, if treated at an earlier period of the disease, the patient might have recovered. In this respect the well-known effects of sulphate of quinine may be adduced. When administered in large doses (*e. g.* in cases of acute rheumatism), it never abates the pulse nor relieves the other symptoms without previously occasioning deafness—a physiological effect intimately connected with its therapeutical agency, for when,

after improving the patient's condition, the dose is too abruptly diminished, the deafness disappears, and all the symptoms previously kept down break out again in full force.

But we also find in animals various predispositions, which not only modify the action of medicines administered to them, but also render them liable to diseases entirely different, when suffering from causes entirely similar. Being about to perform certain experiments on animals kept fasting for a long space of time, I left some dogs without food for several days; but, during the late severe frosts, these animals died unexpectedly. In making the autopsy, we discovered pneumonia in one case, pleuritis in another, and inflammation of the bowels in the two last. Thus, under conditions perfectly identical, these animals were affected with totally different diseases. But similar results may be obtained at will by the physiologist. When rabbits are placed under total abstinence they generally live a fortnight or three weeks; but when certain branches of the sympathetic nerve have been previously divided, the animals die within a few days when deprived of food, through acute inflammation of the viscera connected with the nervous twigs that have been divided. When, some time ago, I commenced this series of experiments, I discovered that the section of large divisions of the sympathetic nerve was apparently unattended with the slightest inconvenience as long as the health of these animals remained perfect. Some of them even became pregnant and brought forth their young; but, as soon as a general debilitation of the system arose from want of proper nourishment, acute inflammation was produced in the organs deprived of nervous influence.* We had, therefore, succeeded in artificially creating particular idiosyncrasies in these animals, and could predict with perfect certainty that as soon as health failed disease would arise on a given point.

Morbid predispositions must, therefore, be viewed in the light of peculiar physiological conditions, which, in most cases, depend upon the nervous system; and an immense progress would be realized in Medicine, if it were possible to diagnose in a state of health the predisposition to disease, and foretell the coming danger. A Russian Army Physician, who had invented a new sphygmometer, and had applied it to the study of various diseases, stated some years ago, that during a severe epidemic of cholera a peculiar slowness of the pulse existed, several days before the explosion of the disease, in those who were marked out to be its victims. I am not aware

* The relation which these experiments bear to the *vexata questio* of bleeding in inflammation will, do doubt, strike the reader.—TRANSLATOR.

whether the reality of the fact has been ascertained by other observers; but it would be, at all events, a most precious boon to know beforehand, when epidemics prevail, what persons are more particularly liable to be affected with the reigning distemper; we should thus be far better able to adopt preventive measures, and prescribe hygienic regulations.

In concluding this lecture, gentlemen, let me advise you not to consider idiosyncrasies in the light of mysterious powers residing within the depths of our organs, nor as entirely novel functions superadded as it were to those which already exist; they must be viewed as mere natural manifestations of the ordinary laws of Physiology.

III. *Treatment of Dyspepsia.* By M. BEAU, Hospital of La Charité.

THE disturbances of digestion comprised under the appellation of *dyspepsia* constitute a morbid state extremely various in its forms. However numerous these may be, two indications only require to be satisfied, namely, to contend with the cause of the disease, and to check the latter by the course of treatment most appropriate to its leading symptoms.

When, as it frequently happens, dyspepsia is connected with the persisting agency of some mental cause, it is difficult to find any remedy but diversion of the mind. Dyspepsia is, however, sometimes expressive of a foul condition of the *primæ viæ*, in which case M. Beau prescribes:

R.	Pulv. ipecac.	-	-	-	-	15 gr.
	Antimon. potassia-tartratis	-	-	-	-	2 gr.
	Aquæ.	-	-	-	-	5 oz.

To be taken in two doses, at an interval of ten minutes. This practitioner even usually begins the treatment of dyspepsia in general by the exhibition of the above emetic mixture. It is his touch-stone for the discrimination of gastric derangement from certain forms of dyspepsia which closely resemble that indisposition. If gastric derangement be really present, it promptly yields to the remedy, and, in the contrary case, no more severe symptom is induced than nausea and slight vomiting. In a young girl, under Mr. Beau's care, dyspepsia was due to the presence of tape-worm, which, being expelled by a

single dose of kousso, the derangement of the digestive organs was at once relieved. If the malady is referable to the abuse of tobacco, tea, coffee, fermented fluids, etc., a cure can be looked forward to only from abandonment of the injurious habits. When the difficulty of digestion is under the influence of some internal disease, it is towards this the practitioner's attention should first be directed.

As to the special treatment of dyspepsia, Mr. Beau begins by banishing from it, almost altogether, narcotics which, according to Mr. Pidoux's graphic expression, are the knout of pain.

Opium and belladonna silence pain, it is true, but they frequently mask its cause, and have, in dyspepsia, the further disadvantage of destroying the appetite, and interfering with the digestive functions. Mr. Beau likewise denounces abstinence from food and repose in bed as highly improper, and is even more stringent in his interdiction of blood-letting which may induce anemia. The patient should eat despite the pain which must follow, abstinence being in dyspepsia more dangerous than excessive feeding. He must also take exercise. Mr. Beau, on one occasion, attended a patient who, believing himself to be suffering from disease of the liver, kept his bed, and, of course, digested his food with much difficulty. The professor ascertained that the supposed hepatic affection consisted merely in intercostal neuralgia, which is so common in dyspepsia. He obliged the patient to get up and take exercise; on the very next day digestion was attended with less pain, and a complete cure was effected in a fortnight. In short, it is necessary that dyspeptic subjects should not lead an eccentric life.

In dyspepsia each case stands alone, and, therefore, the practitioner has to deal with individual predispositions; hence a necessity for feeling his way, in order to discover the really effective treatment. Among the remedies which are daily prescribed in Mr. Beau's wards for the primary symptoms of dyspepsia, none, in our opinion, are so useful as cool sulphur baths. In summer, and during the warm season, cold river-baths or cold water affusions, repeated twice or thrice in the day, are also a powerful medication. Next in order of utility, we may mention a succession of as many as seven or eight blisters applied to the epigastric region. As to internal medicine, trisnitrate of bismuth (half a drachm daily), magnesia, tonics, bitters, such as wild endive, or camomile, pepsine, or Belloc's charcoal are also found advantageous. The latter preparation consists of charred poplar-wood, and is taken at the dose of one table spoonful after each meal; it is more suc-

cessful with men than with women, without any assignable cause.

It will be readily conceived that a properly regulated diet promotes the efficacy of these various remedies. Mr. Beau's patients make three or four meals daily, consisting in soups, meat, vegetables, raw and very ripe fruit. Wine and water is allowed to some, to others, beer, cider, or even water, according to the effects of either upon the digestive functions. Mr. Beau has observed that, more especially in women, wine and water often keeps up dyspepsia, and that many persons suffer merely from the very copious drink they indulge in. Whatever beverage be adopted, it should be taken sparingly. Mental diversion, when possible, is often of the greatest assistance in the treatment: for instance, it is not unusual to find that persons, who digest with difficulty their meals at home, will dine out and eat with appetite and perfect impunity all sorts of dishes. Gymnastics, walking, riding or carriage exercise, constitute hygienic adjuvants of unquestionable value in the treatment of this disease.

Turning to some of the leading symptoms of dyspepsia, we find that loss of appetite, gastralgia, intercostal neuralgia, flatulency, constipation, vomiting, are those which more especially claim attention.

For loss of appetite, Mr. Beau prescribes bitters, seltzer water, spices, iced drinks, and to convalescents he even sometimes permits anchovies, oysters, salad, fruit, and these articles of food are digested without difficulty. Gastralgic pains are removed by blisters and ice internally; both these remedies are likewise applicable to obstinate vomiting. In certain cases, however, vomiting is induced by abstinence, in others, it depends upon the capriciousness of the stomach, and yields when the food is changed. Some two years ago, a patient at the hospital Cochin every day vomited his broth and soup; Mr. Beau altered this for a more nutritious diet of meat and bread, and the vomiting ceased at once. The same result was obtained in the case of a young man whose stomach, in spite of the use of narcotics, rejected every thing, even ice; his food was modified, and the very next day convalescence set in. As to flatulency, it may be removed by charcoal, or calcined magnesia; constipation, by aloetic pills or cool enemas; warm injections should by no means be resorted to, inasmuch as they relax the intestinal fibres, and, therefore, operate in a manner exactly opposite to the required object.

Besides the above, which Mr. Beau designates as the usual remedies, there are others of a more or less expensive description, such as traveling, hydropathy and mineral waters; these

are attainable by privileged patients only, and their efficacy cannot be disputed. Mere change of place, irrespective of any consideration of the nature of the air, is a most useful resource in dyspepsia. Traveling breaks the habits of life, alters the mental pre-occupations of the patient, and exercises upon the digestive powers a still greater influence; sea-voyages present, over land-journeys, the advantage of meeting the double indication of inducing vomiting and submitting the subject to the tonic inhalation of sea air.

It is highly probable that the mere change of place has a considerable share in the effects attributed to mineral waters. Those of Vichy and Plombières, however, taken on the spot, seem, in many instances, beneficial, but they enjoy no exclusive influence, and Mr. Beau considers it a very difficult matter to point out the peculiar spa which will cure the patient. The water-cure is another valuable mode of treatment, particularly for persons in easy circumstances, who eat too much and exercise too little. It is not so useful for the poor, and it operates much in the same manner as bracing mountain air, by stimulating the appetite and reviving the digestive powers.

Forcible ingestion of food is a singular medication, which worked wonders in Paris in the hands of Bénéch. Instead of the gum-water, broth or milk, recommended by Broussais, Bénéch suddenly prescribed beefsteaks, slices of sausage highly flavored with garlic, strong soups and claret. The patients were, of course, terrified by this complete subversion of all their previous diet regulations, but it must be acknowledged that many derived much advantage from this new system.

So much for the main features of dyspepsia. We now turn to the secondary symptoms, the first of which requiring the practitioner's attention is anemia from destruction of the blood-corpuscles. Iron is the classical remedy with which this symptom is usually met, but it succeeds less frequently than is generally supposed. The ingredients of the blood are best restored by healthy digestion. This should, if possible, be re-established by bitters, tonics, exercise, change of air, and the desired object is thus attained with far more certainty than by the exhibition of metallic iron. Scorbutic anemia yields to vegetable acids, water-cresses, and horse-radish; and deficiency of albumen in the blood will be remedied by drastics and hydragogue aperients.

The nervous element of the disease, the nervosism of dyspepsia, should also be taken into account. This condition being one which sorely tries the powers of endurance of both patient and physician; the medical attendant often endeavors to soothe nervous irritation by ether drops, orange flower water, infusion

of lime flowers, and sometimes even with opium or belladonna; but, as we have stated above, these are but palliatives, from which none but temporary relief can be expected. It is not the branches, says Mr. Beau, but the tree that must be felled. In such cases, therefore, cold affusions, tonic diet, and exercise should be resorted to, and the method instituted a hundred years ago by Tronchin may again be adopted with advantage. From the habits of luxurious idleness indulged in, at that time, all ladies complained of *vapors*; Tronchin ordered them to make their own bed and sweep out their own rooms; being a fashionable practitioner, he was listened to, and the success of his prescriptions was such as ultimately to lead to his fortune.

CHRONICLE OF MEDICAL SCIENCE.

OBSTETRICS, &c.

1. *On the Sickness of Pregnancy.* By Dr. CHAS. E. BAGOT. (Dublin Medical Press, Oct. 12, 1859.)

"In 1846," writes Dr. Bagot, "I had had under my care a woman laboring under that extreme form of sickness from pregnancy which placed life in the most imminent jeopardy. I had tried all the usual remedies suggested in such cases, and found them one after another to fail in producing any relief. Although there were no symptoms whatsoever which would make me suppose that any inflammation was either the proximate or remote cause of the sickness, I resolved to try the effects of mercury, and having had some experience of the powers of calomel in allaying other forms of vomiting, I fixed on the administration of this preparation, steadily persevering in its use until her gums showed appearances of salivation, which they did in a very short time. This treatment resulted in the best effects. Immediately after slight salivation took place, the vomiting, previously so persistent, at once ceased,

food remained on the stomach, the patient rapidly recovered, and was in due time safely delivered of a full-grown infant.

"After a more than ordinary length of time, and about three years from my publication of her case, this woman again became pregnant, when she was once more seized with the same dangerous vomiting at the fourth month of gestation, and I was again obliged to resort to the calomel treatment before I could succeed in allaying the almost fatal form of sickness under which she was laboring. By the use of the same medicine she, however, was again brought through, but with this difference, comparing this present attack with the former one, that it was found necessary to prolong the salivation for some days before complete relief from her urgent symptoms was obtained, whereas, on the previous occasions, as I have mentioned, the vomiting subsided on the first appearance of mercurialization.

"I had a third opportunity of trying the calomel with the same patient, as during her next pregnancy, her life was again placed in imminent peril by a recurrence of the same urgent symptoms, the violence of the vomiting, and weakness produced by want of nourishment, exceeding, if possible, the state on the two previous occasions, at least such was the account which I received in the country, where I was at that time residing. A medical practitioner by whom she was attended, having heard of my success in producing relief by salivation, administered to her some medicine which had that effect, but I am not aware of the preparation which he used, and only know that his treatment was of no avail, the symptoms continuing with unabated violence. At this juncture I was written to, when I recommended that slight salivation should be kept up by means of small doses of calomel, given three times daily, and that with each dose she should have a draught containing fifteen drops of chloroform. This treatment was adopted under the direction of a medical gentleman of my acquaintance, and was attended with almost magical effect; after the administration of a few doses the vomiting ceased, light nutriment lay upon the stomach, she gradually gained flesh, became restored to health and strength, and at the full period of nine months was safely confined.

"Since that time (1854) this woman has not become pregnant, for which fact her age will account.

"I hope those brief remarks will suffice to call attention to this important subject, and that no man in the profession will again resort to the induction of premature labor without at least giving a fair trial to the treatment I have recommended. The illness of Mrs. F. was of the very worst form; her symp-

toms were so urgent I despaired of her existence being prolonged; her prostration of strength was excessive; her emaciation extreme; her pulse a small thread; she had no tenderness in the epigastrium; neither had she pain in the region of the womb, nor the least uneasiness on pressure over that organ; she had no febrile nor inflammatory symptoms, and yet the most complete relief followed the exhibition of the mercurial pushed to slight salivation, and this success, I sincerely trust, may induce others to follow the example, and fairly test my plan, although my experience is but the result of three trials, practised on the same patient."

2. *Of the use of Chloroform in the diagnosis of Spurious Pregnancy.* By Dr. SIMPSON, Professor of Midwifery in the University of Cambridge. (Medical Times and Gazette, Sept. 10, 1859.)

The following interesting remarks are from a clinical lecture on spurious pregnancy:

"Chloroform," says Dr. Simpson, "will generally, in any case of doubt, solve the difficulty completely, if only given deeply enough. When the patient is fairly put to sleep with chloroform, the tense abdominal muscles become perfectly relaxed, and on pressing on the abdomen, you will find that the walls will give way before your hand, and sink backwards, till you can feel the spinal column quite distinctly, and you then find the uterus to be of normal size. The phenomena presented by that phantom tumefaction of the abdomen while the patient is being anæsthetised, are very singular. When the patient lies down on her back, and the abdomen is uncovered, it is seen to be projecting, swollen, rounded and defined, like the abdomen of a pregnant woman; but generally, as I have said, with an appearance of unusual constriction around the lower edge of the ribs. No change occurs during the first stage of the administration of the anæsthetic, and until the period of excitement has passed over, the swelling continues, and the muscles remain rigid and tense as at first; but gradually, as that stage passes off, and the respiration offers to become sonorous, the muscles begin to be drawn in, and the abdomen slowly flattens, until it assumes its proper size, or even becomes depressed and relaxed, like the abdomen after delivery. So long as the patient remains in a deeply-anæsthetic state, you can make the most complete and satisfactory examination of the state of the uterus, and, indeed, of all the abdominal organs; and you may have recourse to this expedient with per-

fect safety and success in doubtful cases of real pregnancy also. But when she comes out of her sleep again, in a case of spurious pregnancy, the muscles begin to arch up and to become tense as before, so that by the time the patient is fully awake the abdomen is as large and rounded as ever, and the necessary examination again becomes painful. For, as I have already hinted, the patient has sometimes in pseudocyesis a degree of tenderness in the abdomen that renders her very intolerant even of a slight amount of pressure. The patient, having wakened up and found the apparent tumor still present, fails herself to be convinced of the fact, that it had, for a time, been dispelled. But you may, perhaps, convince some of her friends of the absence of any real tumor, and their corroborative assertion may go far to bring her to a sound and proper belief afterwards."

3. *An Analysis of Two Thousand Consecutive Cases in Midwifery.* By G. RIGDEN, Esq., etc.

This paper was read before the East Kent and Canterbury Medical Society, and gives the following valuable facts: In the 2,000 labors 2,025 children were born. One mother gave birth to twins at four consecutive confinements. Four mothers died from complications or consequences of labor; one from convulsions and coma two hours after delivery, and three from puerperal fever, occurring five, six and fourteen days respectively after labor. Ninety-six children were still-born, forty-six males and fifty females. Four cases had retained placenta, three from inertia and one from irregular contraction of the uterus. Five, after labor, had retention of urine, but all recovered. Five mothers had puerperal convulsions; one died. Twenty-six of the labors were with breech presentation; all delivered naturally; eight of the children died. Fourteen were face presentations; five of the children died; eleven of these cases were delivered naturally. Twelve cases were shoulder or arm presentations, and all were delivered by turning; five of the children being still born. There were six cases of placenta prævia; all delivered by turning; all the children premature and still-born. Nine were cranial presentations, delivered by the forceps; six children being saved. Five mothers subsequently had puerperal fever; three died. One had puerperal mania, terminating in recovery after six months. Eight children were more or less deformed. Pro-lapsed funis, two cases. Of the twins, there were: both males, six; both females, twelve; male and female, seven.—*Brit. Med. Jour.* Oct. 29, 1859.

4. *One Thousand Cases of Obstetrics.* By J. S. HARRISON, Esq.

This paper was read before the Reading Pathological Society, and gave the following data :

In mothers between 15 and 19 years,	11
“ “ 20 “ 24 “	176
“ “ 25 “ 29 “	263
“ “ 30 “ 34 “	263
“ “ 35 “ 39 “	192
“ “ 40 “ 45 “	80
“ “ 45 “ 49 “	9

November, December and January had more than any other three consecutive months. May had the largest; April, the smallest. Classifying them according to the hours, there were 270 occurring between 12, P. M. and 6 A. M.; 268, from 6, A. M. to 12, M.; 214 from 12, M. to 6, P. M.; and 248, from 6, P. M. to 12, P. M.

The duration of pregnancy averaged about 280 days. The average duration of labor was 7.36 hours; first labors being, as is usual, much longer. The 1,000 labors resulted in the birth of 1,010 children; 504 males, 506 females. Breech and feet presentations numbered 39; face 17; with an extremity, 121. Lingered labors, 15; instrumental, 17; preternatural and complicated, 61.—*Ibid.*

5 *Thirteen Hundred Cases of Midwifery.* By A. SMITH, Esq., etc.

In these 1,300 cases, 1,320 children were born; 700 males, 620 females; still-born, 65; premature births, 38. Presentations of the breech, 23; of the face, 2; forehead, 20; extremities, 9. Prolapse of the funis occurred in 6 cases. Placenta prævia, complete, 3—children all still-born; partial 2—one child dead. Three mothers had convulsions; three had peritonitis; one, mania. Version was performed in 4; the forceps were used in 25; craniotomy in 3. There were no cases of retention of the placenta, or of severe post partum hæmorrhage. He attributes the absence of these complications to the practice of applying a binder as soon as the second stage of labor commences, tightening it after delivery of the child, and again after the expulsion of the placenta, and abstaining from the use of ergot. The number of forceps cases is great,

but no bad results have followed, and he believes their timely employment prevents laceration of the perinæum rather than causes it.—*Lancet*, Nov. 12, 1859.

6. *Still-Born Children.* By J. HARDAWAY, Esq., etc.

This paper gives 732 cases, in which 72 children were still-born, showing, in the aggregate, about 10 per cent. No other statistics are given.

7. *Statistics of Four Thousand and Forty-nine cases of Midwifery.* By R. DUNN, F. R. C. S., etc.

Of these there were 228 premature births; 2,133 children were males, 1,688 females; 2 cases of triplets and 45 of twins, 3 cases of monstrosity. There were 170 still born; 60 cases of preternatural presentation. Prolapse of the funis, 11; of which 8 were born dead. Breech presentations, 25; still-born, 9. Face presentations, 3; face to pubis, 11. He had 10 cases of craniotomy; 6 cases of placenta prævia; 30 of adherent placenta; 12 cases of puerperal fever, 3 died; 4 cases of puerperal convulsions, all recovered. Phlegmasia dolens occurred in 6 cases, and 2 proved fatal; scarlatina in 3, and 1 died.

8. *On Statistics of Midwifery Practice, from July 2, 1808, to December 31, 1858.* By W. H. BAILEY, F. R. C. S.

In order to afford an opportunity of comparing provincial statistics with those of town and hospital practice, the author submitted the results of fifty years' extensive practice in midwifery. The births amount to 6476—3290 males, and 3186 females. There were 53 cases of twins—63 males, and 38 females; 21 were still-born. There was 1 case of triplets, which lived till the next day. There were 6120 cases of head-presentations, and 356 preternatural cases. Presentations of the face to the right side were very tedious; in such cases, turning or the use of the forceps was advisable. In 44 cases the arm or hand presented. In 21 the funis presented; 1 or 2 of these were still-births. Of breach cases, 45; when the face presented to the front those cases required the aid of the forceps to save the child. In 49 cases the face, and in 9 the abdomen or back, presented. In 180 cases (primary) the feet presented. In 17 cases placenta prævia existed. In 1 the

placenta was expelled first. As a rule, the author dilates gradually and turns in these cases. All cases were successful, both to mother and child, if at the full time. Hæmorrhage was fatal in two cases, attended by midwives. There were 2 cases of sudden death after labor; no apparent cause. Embryotomy was performed only twice. A tabular statement was appended, showing the number of deliveries in the respective months of the year.

9. *Case of Phantom Tumor.* (Under the care of Mr. SPENCER WELLS.)

F. M., aged 22, a well-made, fresh colored, rather fat, unmarried woman, was sent from the country to Mr. Spencer Wells as suffering under ovarian tumor, and as a fit subject for ovariectomy. She was admitted, June 7, 1859.

She stated she had been in good health until two years ago; that since that time she had been obliged to give up all work, and that lately she had become thinner. She attributed the commencement of her illness to having received several severe kicks about the vulva and inner part of the thighs about a year before she had to give up work. She said that the kicks were followed by great swelling and pain, and afterwards by escape of blood, both fluid and in clots, by rectum and vagina; that there was a recurrence of this hæmorrhage several times during the year, and that the abdomen began to enlarge, and had continued to increase gradually up to the present time. She had undergone a great variety of treatment. She says the catamenia recur with only nine days' interval between the cessation of one and the commencement of the next period; that many clots come away; and that she suffers great pain in the back and loins for three days at least before the period, and for three days after it.

Present State.—Before examining the abdomen of this patient, and judging merely from her good color, plumpness, and rather hysterical excitable manner, Mr. Wells at once expressed his belief that a very evident enlargement, visible through the dress, and giving her the appearance of a woman at the end of pregnancy, was not owing to ovarian disease. On uncovering the abdomen the nature of the case was instantly apparent. There was precisely that contraction of the false ribs, and the bow-like bulging or arching forwards of the recti from some four inches above the umbilicus down to the symphysis pubis, so well described by Dr. O'Ferrall, which is so very characteristic of these cases. She complained of great pain

on pressure (even very slight pressure) on any part of the abdomen. The parietes were furnished with a thick layer of fat, so that the resonance on percussion was not tympanitic anywhere. The uterus was found to be in the normal state, but she complained that the examination was very painful, owing to tenderness of the vagina.

June 9.—Some medical visitors in the wards to-day being doubtful as to the nature of the tumor, and the accuracy of the diagnosis, Mr. Wells showed that as she was gradually brought under the influence of chloroform the abdominal tumor slowly but completely disappeared, the arched recti falling backwards, the diaphragm rising upwards, until, when she was completely narcotised, there was not the slightest appearance of any tumor, and the abdomen was perfectly soft and flaccid. It was curious, also, to observe, that as she recovered from the effects of the chloroform the recti recovered their tension, the diaphragm descended, and the tumor reappeared before she was completely awake. This was observed on more than one occasion when chloroform was used as a clinical demonstration of the case. It had been noticed that when she was asleep she lay flat down in bed, but when she was awake she wanted to be propped up to relieve dyspnœa.

The treatment consisted of assafoetida, valerian, and *ridicule*. She soon returned home, going to the very brother she said had brutally kicked her.

10. *Results of the Operation of Paracentesis.* By Professor SIMPSON.

If you ask, What results are to be expected from this operation, and with what hope of cure may it be undertaken? I must at once tell you that the hopes of an ultimate and complete cure by means of it are very faint and slight indeed; and that it is usually had recourse to only as a means of temporary palliation. It has happened comparatively but very rarely that the simple tapping of a cystic ovarian tumor has been followed by a final cure of the disease. In ninety-nine cases out of a hundred, where the patient survives the first tapping, the operation requires to be repeated again and again; and every every time it is had recourse to the interval, as a general law, becomes shorter and shorter between every two successive tapplings. Sometimes women have survived for many years a series of tapplings, and enormous quantities of fluid have, in such cases, been drawn off from the cysts, as the following table shows:

TABLE OF OVARIAN TAPPINGS, ETC.

Cases.	Number of Tappings, etc.	Quantity of contents.
Lady Paget (Dr. Mead),	67 in 5 years.	240 gallons.
Mr. Ford's case,	49.	350 "
Ramsbotham's,	129 in 8 years.	461 "
Morand,	in 10 months,	427 "
Martineau, of Norwich,	80 in 25 years.	729 "

The table shows you, I repeat, the frequency with which the operation of tapping has been repeated in a few of the more rare and remarkable cases that have been put on record, and the large quantity of fluid that has been abstracted in each case in the course of these oft-repeated evacuations. Sometimes you may possibly meet with a case where the patient does not succumb until after the lapse of many years, and after the operation has been very frequently repeated. But that is certainly not all the history of the ordinary run of instances of ovarian dropsy, for the patient usually dies after the operation has been only a few times performed.

11. *Persistence of Pregnancy during and after Uterine Phlebitis.* By LOUIS R. COCKE, M. R. C. S. E.

The accompanying case illustrates so forcibly the tenacity of life which is sometimes exhibited by the foetus in utero, under unfavorable circumstances, that I have thought it worthy of publication.

Mrs. A—, a lady, aged 22, has one living child, three years old, since the birth of which she has repeatedly aborted. The abortion, in each case, being attributable to some shock or violence accidentally applied. Her pregnancies have all had this peculiarity,—that she has never been made conscious of them by any symptom, except increase of size, until the period of delivery, although she has twice borne the foetus up to the time of six-and-a-half months, exclusive of the occasion on which she bore the living child. Her menses have never ceased, nor even been perceptibly affected by pregnancy; nor does she remember to have experienced any indication of quickening, nor to have felt the subsequent movements of the foetus. Eleven weeks ago, I was called upon to attend her, she having aborted, in consequence of having been turned over in a carriage. The foetus, as nearly as I could judge upon a rather cursory examination, was of about two months. Her recovery progressed favorably until the eighth day, when the following symptoms began to appear: Tenderness over the lower part

of the abdomen, increased greatly by deep pressure, dry skin, loaded tongue, thirst, a painful state of the mammæ, and a hard pulse of 105 in frequency, with great diminution of the lochial discharge, and extreme tenderness of the uterus, as felt per vaginam.

I treated this as a case of impending hysteritis, for a few days, when the next noteworthy set of symptoms made their appearance, consisting (in about their written order) of throbbing pain in the left groin, some fullness and tenderness in the course of the left femoral vein, pains (increased at night) in the joints of the extremities, which she attributed to rheumatism, a sense of putrid smell and taste, which was a source of constant harassment to her, and a discharge of a greenish color and grumous character, from the vagina, which, she said, partook of the smell which was so constantly present in her nostrils. Coincidentally with these, her strength and appetite failed, her tongue became dry and brown, some traces of sordes made their appearance, her pulse reached 115 in frequency, and decreased in volume and force, her skin assumed a cachetic, almost cadaverous appearance, and two small abscesses formed on the fingers of the right hand. Having emptied the bowels by a cautious purge, I began to administer quinine in doses of five grains twice a day, and allowed her a liberal amount of stimulants in the form of port-wine, and the egg-mixture of the pharmacopœia. Under this treatment, she gradually recovered, and went into the country for change of air. Here was, apparently, an end of the case; and, I think, it must be conceded to have been one presenting unmistakable signs of hysteritis, and subsequent purulent absorption. On her return from the country, however, about a week ago, she summoned me to give an opinion on the gradually increasing size of her abdomen, and the occurrence of pains, which, she insisted, were those of incipient labor, and which had commenced during the day. Finding that the bowels were in a constipated state, I directed her to take a tablespoonful of castor-oil, and left her, to be recalled on the next day, when the pains had assumed greater force and frequency. Upon examination, I found the os uteri dilated to the size of a crown-piece, and a funis protruding, the abdomen of the fœtus presenting. Gradually dilating the os, I turned and delivered by the feet. It proved to be a fœtus of five months, showing scarcely any signs of decomposition, and unquestionably, therefore, twin with the one which had been expelled eleven weeks before.

She can give no reason for the last abortion, her health having been good, and she has no recollection of anything which

can be construed into an exciting cause. It can readily be understood, however, that a woman having no suspicion of her pregnancy would fail to notice an amount of violence or exertion to which her attention would have been drawn had she known her condition, and been desirous to observe caution in reference to it.

12. *Six Ovarian Cysts and Tumors Removed by Ovariectomy.*
By SPENCER WELLS.

I. *A Fibrous and Cystic Tumor* removed from a married woman, 29 years of age. It weighed seven pounds and a-half, and consisted of a lower solid portion, simply fibrous in structure, and of a large cyst at the upper part, which had contained several pints of fluid. Portions of fibrine were adherent to its inner coat. The patient died forty hours after operation, and about six pints of clear serum were found in the right pleural cavity. A portion of the abdominal wall, including the incision, was also shown to illustrate the accuracy of union of the divided peritoneal edges of the wound, when these edges are folded together by passing metallic sutures through them.

II. *A Multilocular Ovarian Cyst*, with masses of pseudo-colloid substance in its walls, successfully removed from a married woman, 47 years of age. In this case the pedicle was on the right side, but the left Fallopian tube, having been found diseased and adherent to the cyst, was also removed. The patient is now in robust health.

III. *A Multilocular Ovarian Cyst*, successfully removed from a married woman 41 years of age. The chief point of interest in this case was the fact that tetanus had appeared a fortnight after the operation, and the patient had recovered during the use of woorara. The case had been brought before the Medico-Chirurgical Society.

IV. *A Multilocular Ovarian Cyst*, also successfully removed by ovariectomy from a single woman, 29 years of age. The cysts and contents had weighed fifty-four pounds. Most of the cysts were very small, but they had been broken down one after the other, and the whole removed through a four-inch incision. The convalescence of the patient had been delayed by a bed-sore, but she was now quite well.

V. *The Fallopian Tube* and remains of the *Peduncle of a Multilocular Ovarian Cyst*, successfully removed from a young lady only seventeen years and three months old. The cyst and contents weighed thirty-eight pounds; but the whole had not been preserved on account of the difficulty of showing the nu-

merous aggregations of small cysts of which it was composed. One point of interest in the case was, that the pedicle had been completely twisted round during the growth of the tumor. Mr. Wells alluded to a case in New York where such a twisting of the pedicle had led to strangulation, obstruction of the veins, and gangrene of the cyst, followed, of course, by the death of the patient.

VI. *A semi-solid Ovarian Tumor*, weighing eleven pounds and a-half, and two large cysts attached to it which had contained forty-one pounds of fluid, forming, together, a very large tumor of the right ovary, which Mr. Wells had removed from a single woman in the Samaritan Hospital, on the day of meeting. It was an unfavorable case, but one in which it was decided to give the patient a chance of a cure, as it was clear that life could not be prolonged very much, and it was not thought right to leave the woman to an inevitable and painful death, when there was even a moderate hope of recovery after operation. Mr. Wells had seen her just before the meeting, and she was then going on remarkably well.

Mr. Wells added that he had now brought before the Society all the ovarian cysts and tumors of the cases in which he had performed ovariectomy. At the meeting of the Society of the 1st of November, he had shown a cyst removed four days before the meeting, and stated that the lady had gone on well since the operation. He had now to add that she continued to do well until the eighth day, when tetanus came on, and she died two days afterwards. This case had been treated by woorara, and had also been brought before the Medico-Chirurgical Society. The general result of Mr. Wells's personal experience of ovariectomy in hospital and private practice, had been nine recoveries and four deaths out of thirteen cases. The case last alluded to was the fourteenth.

13. *Utero Ovarian Muscle.*

Those of your readers who have been in the habit of seeing the *Journal of Physiology*, edited by M. Brown-Séquard, may remember a paper from the pen of M. Rouget, which appeared in that journal in the numbers of April, July and October, 1858. In that highly interesting and curious paper, the author entered, at great length, on some of the leading points connected with the erectile organs of generation in woman; arriving at the following general results: 1st. That the body of the uterus presents the structure of a genuine erectile organ, or a veritable spongy body; and that to the ovaries also are at-

tached erectile bulbs. 2d. That in all the vertebrated animals, and especially in the mammiferous, there exists a special muscular apparatus which embraces the oviduct and the ovarium, so as to determine the adaptation of the former to the latter during the period of ovulation. 3d. That the bands or bundles of muscular fibres of this apparatus have, with the spongy bodies of the uterus and ovaries, and particularly with their efferent sinuses, such relations that, at the moment of their contraction, the meshes of the net-work, so to speak, in the middle of which the veins pursue their course, contracting themselves in every direction, these latter become compressed, and their circulation is more or less stopped. 4th. That the contraction of the muscular apparatus which embraces the uterus and Fallopian tube, persisting during the entire period of ovulation, the obstacle to the current of the blood, and the erection of the spongy bodies of the uterus and ovaries, which is the immediate result of this interruption, have the same duration. 5th. That, menstruation coinciding with ovulation, it is natural to consider that the former is also the immediate result of the erection of the uterus; a genuine menstrual hæmorrhage never showing itself except in those animals in which this organ exhibits a real erectile tissue. 6th. That, if sexual excitement can, as is exceedingly probable, determine the erection of the uterus and ovaries, it is easy to account for its influence on the simultaneous production of menstruation and ovulation.

14. *On the Influence of Sex on the Diseases of Children.* By Dr. R. KÜTTNER.

The materials for this essay are derived from the consideration of 10,000 cases of disease, which have been observed at the Children's Hospital at Dresden. The following are the conclusions Dr. Küttner arrives at:

1. Male infants are far more frequently, and especially during the first year, the subjects of disease of the digestive organs than female infants. It is a well-known fact that they are more difficult to bring up by hand, being much more liable to have the digestive apparatus disordered by defective or erroneous diet. In a relatively equal mortality of the two sexes, a much absolutely greater number of males die of this class of diseases. 2. So also diseases of the nervous system, particularly brain affections, and especially within the five first years of life, are almost twice as frequent in boys as in girls. 3. Finally, boys are far more disposed to hernia (of

116 cases, 75 occurred in them) than girls, and that with regard to both umbilical and inguinal hernia. 4. On the other hand, girls suffer more than boys from affections of the respiratory organs, especially catarrhal affections; for while the former presented 1,128 cases, the latter presented but 988. But the difference becomes especially obvious during the fifth year; as the difference, insignificant (873 girls, 843 boys) prior to that age, then mounted up to 255 as compared to 145. Of 498 cases of pertussis, 281 occurred in girls and 217 in boys. Of 17 cases of croup, 9 occurred in boys, and 8 in girls. 5. In organic disease of the heart, a preponderance of females existed, viz. 13 out of 19 cases. 6. In acute blood-diseases, as exanthematous and typhus fevers, sex seems to exert no influence; but such influence is remarkable in the chronic blood-diseases and dyscrases, especially in anæmia, and scorbutus-like depravation of the blood. Of 144 cases of this class of diseases, only 26 occurred in males, and 118 in females. The difference becomes more marked with the advance of life: for while under 7 years of age, 17 boys and 30 girls belonged to this group, between the years of 8 and 13, there were but 8 boys to 88 girls. Scrofula and tubercle exhibited themselves in the proportion of 305 in girls to 269 in boys. Until the course of the second year, there was a preponderance in the males (86 boys to 69 girls); but after the fifth year, there were, owing to the greater frequency of pulmonary phthisis among them, 121 girls to 72 boys. Rickets were observed in 577 boys and 610 girls, the disease being later developed and more enduring in girls than in boys. Congenital syphilis was observed in 36 boys and 49 girls. 7. Chronic diseases of the skin occurred in 903 of the 10,000 cases of disease; but no marked difference from sex was observed prior to the ninth year, after which period girls were found much oftener subject (88 to 31), and especially to diseases of the scalp than boys. 8. Enlarged thyroid gland was met with in 15 male and 35 female children,—25 of the latter having passed the ninth year.

15. *Cases of Delivery.*

M. Ameuille related an interesting case to the Paris Société Medico-Pratique, in illustration of the following question: May a *primi para* of robust frame become delivered of a full-timed, well-formed infant, and this infant fall into a privy, the mother resorting there simply to satisfy a want? In the present case, a lady, aged 20, in robust health, having become

with child by a young man, left her home in the country, and repaired to a Paris lodging-house; and awaiting admission into the Maternity, she had made no preparations for the reception of the child. She was taken ill in the night, and had several motions; and, at last, while proceeding towards the vessel, to pass, as she believed, another, the child dropped from her on the carpet. Her intention was, had not a more sudden pain seized her, to have repaired to the privy, into which the child must certainly have dropped. It is obvious, with the mystery of the case and the want of preparation for the child, how easily a charge of infanticide might, in the event of the child's having fallen into the privy, have been brought in such a case. M. Simonot had no doubt that a woman might be delivered of her first child without being aware of it. He knew the case of a lady who, at four o'clock, was walking about her room and laughing, there being no dilatation of the os or other sign of delivery, and who yet, in twenty minutes later, gave birth to a child and the placenta without pain or exclamation. M. Perrin had recently been called to a woman pregnant of her third child, who, taken first with a violent desire to pass water, and then to evacuate the bowels, passed a child into the utensil. Had the night not been so cold, she would have gone to the privy. There are many such facts on record; but they may be usefully borne in mind when girls are charged with improperly disposing of the fruits of illicit intercourse, and even when accompanying circumstances are suspicious.—*L'Union Méd.*

16. *Case of extreme Emaciation, the result of obstinate Vomiting in Pregnancy.* By Dr. WM. TYLER SMITH.

A girl, aged 19, unmarried, was admitted into St. Mary's Hospital in July last. Obstinate vomiting, at first supposed to depend on cerebral disorder, continued from the time of her admission. She became so extremely reduced in flesh, that at the end of six weeks, her weight was only forty-seven pounds and a-half. At this time she was unable to move in bed; delirium was frequent, bed-sores appeared over the sacrum and nates, and she appeared to be dying. Pregnancy was now suspected. The catamenia were found to be absent; the breasts were full, notwithstanding the emaciation of the rest of the body, and the uterus had increased in size. Remedies had been of no avail. She was too weak to allow of artificial abortion. A nurse was put by her bed-side to give her a single teaspoonful of nourishment every half hour. The body was rubbed with oil, and

beef-tea injections were administered. Under this plan the sickness ceased; the quantity of nourishment was slowly increased, and she improved in strength, and became comparatively stout. Pregnancy went on to December 3, when she miscarried at the fifth month, and is now recovering.

17. *On a case of Hysteria simulating in the most perfect degree Natural Labor.* By Dr. RICHARD HODGES.

The author was engaged to attend a woman said to be in the fifth month of pregnancy. Four months afterwards he was sent for, the patient being stated to be in labor. The pains were found to be severe, and like those of the last stage of parturition. On examination, however, a tumor was found to present, which turned out to be the bladder, distended and prolapsed. There was no pregnancy.

BIOGRAPHY.

Biography of Claude Bernard.—(Med. Times and Gazette.)

The intensely interesting and highly instructive Lectures on Experimental Pathology and Operative Physiology, which have been recently commenced at the College of France, by M. Claude Bernard, being about to appear in the columns of the *Medical Times and Gazette*, a brief notice of the labors and scientific career of their distinguished author may not be without interest for the reader.

M. Claude Bernard was born in 1813, at St. Julien, near Villefranche, in the department of the Rhone. I am unable to state exactly in what year he commenced his medical studies, but it must have been about '34 or '35, for, in 1839, he, after undergoing the customary ordeal, entered one of the Paris hospitals as "*interne*."

Two years later he became attached to the lecture-room of the celebrated Magendie, at the College of France, his position being that of "*Preparateur*." In other words, the duty devolved on him of making all the preliminary arrangements

which the proposed experiments of that distinguished Professor might require.

In 1843, the youthful Bernard, after a brilliant examination, and the usual defence of a thesis, was received as M. D.; and, in 1853, he obtained the degree of "*Docteur en Sciences*"—no mean honor, as all those who know the severity of the test must admit.

In 1847 we find him occupying the honorable and important office of "*Suppleant*," or substitute to Magendie, and even at times lecturing with very considerable ability to the crowds of scientific men and students who were wont to repair to the lecture-room of that distinguished man. This office, of such high trust and responsibility, he worthily held for seven years.

The natural bias of his mind had, from the very commencement of his studies, inclined him towards physiological researches; but, alas! Bernard was not one of fortune's favorites, and his scanty means forced him to quit the field where he was destined, at a later period, to gain such glorious laurels, and to return to the domain of Surgery. He even went so far as to publish a "*Manuel de Médecine Opératoire*," in collaboration with M. Huette. Circumstances, however, having brought him in contact with Magendie, the marked taste which he speedily evinced for physiology satisfied that great man that he might one day be surpassed by the young aspirant. Fortunately for science, Magendie possessed great influence over him, and succeeded in calling him back to his less lucrative but more favorite studies of physiology.

Some short time after this backsliding—if I may be allowed to use the expression—he was called upon to occupy a position of higher importance still, and one more consonant with his independent and speculative nature than that of assistant to another could possibly be. I allude to the chair of Physiology, which had just been created, in connection with the Faculty of Sciences.

But higher honors were in store, and thick and fast did they descend on him; for we find that, shortly after having attained to the Professorship, he was elected a Member of the Academy of Sciences, in lieu of M. Roux, the eminent surgeon, whose death has just created a vacancy in that learned body.

The following year was signalised by an event which profoundly moved the scientific world—namely, the death of Magendie, whose name had been for years identified with the progress of experimental physiology, and who had, by his extraordinary success, earned for himself the name of "Chief of the Experimental School of Physiology of France." It is well known that the end and object of Magendie in all his

teaching and investigations was the subjugation of theory to practice; and in this respect he was a most valuable guide and director to those who were disposed to follow him in his experiments. Sceptical and inquisitive by nature, he mercilessly overthrew whatever would not stand the test of experiment. From such a master the inquiring mind of Bernard could not but take a favorable bias. From such a man he could not fail to draw healthy inspirations. Hence we find Bernard adopting the principles of his esteemed master, and steadily and perseveringly improving and enlarging the field of experimental science—philosophically considering and investigating the normal and morbid manifestations of the animal economy and the laws of life. It was but natural to suppose that the illustrious Magendie should be replaced by his talented pupil; and right worthily has he since filled up the blank which his master's death created, as the attentive and admiring crowds always to be seen in his class-room amply testify. It is not the orator they flock to hear, for, as a speaker, we daily hear better. So rapidly do his ideas seem to succeed each other that he is often at a loss to find words to clothe them. His voice, though not harmonious, is far from being unpleasant. In stature he is above the middle size, well knit, broad-chested, of a nervobilious temperament—the latter element predominating. A highly intellectual expression of countenance, with a large and powerful head, give unmistakable evidence of the energy and indomitable perseverance of the man. Though not a rhetorician, in the strict sense of the word, he possesses the rare and happy talent of captivating and enchaining his audience, and inspiring them with the conviction that he is fully and completely master of the subject which he expounds.

But to take a glance at his labors, and what he has already achieved in his particular department. Almost all of his discoveries are of a highly important and practical kind; and they have given, within the last few years, quite a new character to physiological investigation. He has not only struck out new paths, but he has roused the attention of the scientific and the learned to the reconsideration of many fundamental questions which were supposed to have been long settled, but which, in reality had been but imperfectly established; and he has thereby contributed much to a clearer, a more correct, and a more comprehensive appreciation of the essential functions of the animal economy. As far back as 1844, when he was comparatively a young man, and but newly entered on the field of physiological investigation, he published an elaborate paper on the different secretions of the alimentary canal, and the parts which they respectively play in the digestive process.

He had the merit of being the first to show the real mechanism of the secretion of the gastric juice, and the various changes and modifications produced by this liquid on the aliments taken into the stomach. Not less interesting and instructive are the results of his investigations into the saliva and the intestinal secretions generally, and his inquiries into the influence of the different pairs of nerves on the organs of digestion, circulation, and respiration.

But it was in the year 1849 that Bernard first laid the real foundation of his reputation as an experimental physiologist. Prior to this period the real function of the pancreas was involved in obscurity. It had been considered in the light of a salivary gland—a conclusion derived from the similarity of its structure to organs of this class. By a series of carefully-conducted experiments, Bernard showed most conclusively that the real function of the pancreas related to the formation of chyle and the digestion of fatty matter taken into the stomach. For this important discovery he was honored with the great Prize for Experimental, Physiology, awarded by the Academy of Sciences in that year.

In 1850, he made known to the scientific world his first discoveries in connection with the liver; and he showed that this organ—the principal use of which in the animal economy was believed to be the secretion of bile—had, in reality, another important function, the existence of which had been, up to this time, completely ignored by physiologists. This discovery was no other than that the liver, in its normal condition, besides secreting bile, was constantly producing sugar. To this new function he gave the name of "*Fonction glycogénique du foie.*" By an immense number of experiments, conducted on species belonging to three of the principal branches of the animal kingdom, he proved to the entire satisfaction of the Academy of Sciences that the blood, before entering the liver by the *venæ portæ*, contains no sugar; while that which leaves the liver, to enter the heart by the hepatic veins, is abundantly charged with this element. He further proved that this new function was intimately connected with and influenced by the nervous system, and that, by operating on the latter at certain points, an artificial diabetes mellitus can be produced at will. This important discovery, which at first met with much opposition, is now, so far as I know, an acknowledged fact; and its importance, as regards the pathology and treatment of diabetes, is too evident to require remark. It follows from it, that this malady is nothing more nor less than the disturbance of a physiological function; and, that function residing in the liver, it is to this organ, and to those parts of the nervous system

which influence it, that the medical man must direct his attention, with a view to its cure. For this most important and practically useful discovery, M. Bernard was again awarded the great prize for Experimental Physiology.

In 1851, his researches in connection with the great sympathetic were so highly approved by the Academy of Sciences, that, for the third time, he received the great prize in physiology. They have since been published, and are not the least interesting of his numerous productions. He shows therein, that if a section be made of any of the branches of this nerve, the temperature of the parts which they supplied is instantly and permanently augmented, and that the inverse of this takes place when the nerves of the cerebro-spinal axis are divided—in other words, that, in this latter case, there is a manifest diminution of the temperature. Further, that the section of the branches of the great sympathetic, besides being followed by increased temperature, is also attended with great vascularity of the parts which these branches supply. It is easy to appreciate, in practical medicine, the great value of these discoveries, which, up to the present time, so far as I am aware, have not been controverted.

Other discoveries on the subject of animal heat, too numerous to be embraced in this notice, have also been made known by M. Bernard. His experiments, proving the elective elimination of certain substances by the secretions, and especially by those of the salivary glands, as well as his discoveries on the special functions of the spinal nerves, are fraught with intense interest and importance, as well to the physiologist as to the practical physician. Indeed, there is hardly a question in the wide domain of physiology and pathology which has escaped his attention.

Having thus touched on the leading points in M. Bernard's scientific life, we must not forget to add that he follows science for science' sake; patiently and perseveringly he toils for seven or eight hours every day in his laboratory. The world is deeply indebted to him; and, nevertheless, he is but poorly remunerated. His two professorships—the one at the Faculty of Sciences and the other at the College of France—together with the trifling sum derived from the Institute, of which he is a member, constitute in all but a modest income—not greater, perhaps, than that of a moderately busy country practitioner in England. Thus is science honored—thus are its disciples recompensed in military and imperial France!

Before concluding this paper, it may be well to say a few words on the College of France. This institution was founded by Francis I. in 1530, at the joint solicitation of the preacher

Parvi and the famous Budaens. The number of professors, which was at first but limited, amounts now to twenty-eight. These professors—or "*Lecteurs*," as they were originally named, from their duty having been, in early times, to read classical authors to the students—give public and gratuitous lectures on all the leading subjects in science, literature and art. One peculiarity in this college consists in the perfect liberty accorded to the teachers in their several departments. For example, the professor who occupies the chair of medicine has the privilege of teaching any one of the numerous branches of medical science. He may lecture on surgery, materia medica, therapeutics, physiology, or any other subject embraced under the general head medicine.

The edifice is plain, but elegant. Among other apartments it contains some eight amphitheatres, where lectures are delivered. In several of these, certain professors lecture by turn. That used by M. Bernard is exclusively set apart for the chair of medicine. It is a large square room, capable of containing six hundred students. At one side of the room, on an elevated platform, is the professor's chair, immediately in front of which is a table, some ten or twelve feet long, on which all the experiments conducted in public take place. From the front of this platform the seats for the students rise in tiers. The roof is ornamented with four frescoes, representing Hippocrates, Aristotle, Buffon and Linnæus. Elegant as is the general appearance of the room, it has a serious defect. The light, being derived from the roof, falls directly on the table, and any delicate operation, requiring close inspection, forces the professor to place his head in a position which effectually intercepts the rays of light, on their way to the object under examination. In an adjoining apartment is the laboratory, which consists of two small rooms. In that nearest the lecture-room are some small furnaces, and sundry glass cases, containing the larger instruments required for the experiments. In the centre of this room is a strong, solid table about five feet by three, perforated in sundry places, so as permit cords to pass through it, to control the movements of the animals subjected to vivisection. The other room resembles a chemist's shop. In it are kept all the chemical and medicinal agents, as well as the smaller instruments. In one corner is a sand-bath, intended for experiments on cold-blooded animals. Beneath these apartments, and connected with them by a stone staircase, are a series of cellars, dark and dismal enough, in which are kept animals of every description—dogs, rabbits, guinea-pigs, etc. etc.—with here and there huge basins and troughs, filled with frogs and other cold-blooded animals—all intended

in their turn to be sacrificed and offered up on the altar of science. Although that part of the College of France in which M. Bernard lectures is modern, as compared with the rest of the building, still it leaves much to be desired. The laboratory is far too small; and it is a matter of wonder to those who visit it, how the professor, his immediate assistants, and his numerous private pupils, can move about in the pursuit of their studies. It is to be hoped that an amelioration in this respect may, ere long, be effected.

NECROLOGY.

1. *Account of the Illness and Death of Dr. William Pulteney Alison*, Emeritus Professor of the Practice of Physic in the University of Edinburgh. By PATRICK NEWBIGGING, M. D., F. R. C. S., Edinburgh.

[As a representative man, the medical profession had reason to be proud of Dr. Alison. He was one of those whose reputation throughout Great Britain, not only as a physician, but as a scholar and a philanthropist, added lustre to the title, and always placed the physician prominent in every enterprise having in view the welfare of the human race. Lord Brougham took occasion to add a public tribute to his memory in a late speech before the "National Association for the Promotion of Social Science," by saying, "a greater loss the medical profession and society could not sustain." We wish to unite our sorrow with the profession in Scotland, and therefore re-publish the following interesting account of Dr. Newbigging, from the Edinburgh Medical Journal.—EDS.]

On the 27th of May, 1846, whilst prescribing for a patient in the Royal Infirmary, and surrounded by a numerous assemblage of students, Dr. Alison suddenly fell down, attacked by

a violent convulsion fit, preceded by a gentle scream or cry. The alarm spread quickly through the house, and Dr. Paterson, then one of the physicians of the hospital, was the first to go to the succor of his friend and former teacher. That gentleman, in a recent communication to me from Tiverton, says, "That he found Dr. Alison lying on the bed of the patient for whom he had just been prescribing, his neck-cloth unfastened, breathing stertorously, and quite insensible; not above a few minutes had elapsed from the time of the seizure." Dr. Paterson's impression, from the appearances presented, was, that the attack was of an apoplectic nature. There was evidence of congestion and pressure on the brain, the pulse was full and laboring, and the patient quite incapable of being roused. The report of the bystanders was, that the illness had commenced with convulsions of an epileptiform character. Still he was by no means satisfied that the case was simply of this nature. The treatment at the time could not be doubtful, as Dr. Paterson remarks, and accordingly, after removing Dr. Alison, on the bed on which he lay, into the adjoining room or closet, off the ward, he was bled from the arm—the blood flowing freely. On the loss of a few ounces, Dr. Alison became conscious, and other medical officers of the hospital, including Drs. Christison and Trail, having arrived, he had the advantage of acting in concert with these gentlemen, in the management of the case. Dr. Christison informs me, that the delirium which at this time followed the attack, was of a violent, and, for such a man, of a highly demonstrative character. About three hours from the commencement of the attack, Dr. Alison was able, with assistance, to walk down stairs, and return home in his carriage. He ate his dinner with appetite, felt well, and was able to drive a distance of about six miles, to his country house. He slept quietly during the night; and next day he was, apparently, in his usual state of health.

Dr. Alison remained for some days at Woodville, happy and comfortable, reading and enjoying the beauty of that place. He resumed, soon after, his usual duties; but I believe that, for a time, he very properly absented himself from the hospital. The attacks, notwithstanding, recurred at intervals.

On the 1st of December of the same year, he was attacked for the fourth time, under peculiar circumstances. He had occasion to visit a patient in Roxburgh Terrace, and whilst walking, his foot slipped on the ice, and he fell on his back. He was not in the least stunned, and declared positively that his head received no blow. He rose immediately, but soon felt slight pain in his forehead. He did not, however, return home, but entirely forgetting, as was his wont, the necessity of

care of himself, he continued to visit his patients, one of whom resided about three miles from town. On returning from this duty, he felt unwell, and desired the coachman to drive home at once, instead of to the house to which he had at first directed him to go. After this he remembered nothing. The coachman felt a jerk in the carriage, and looking back, saw that his master had fallen down. Finding that Dr. Alison was insensible, the man stopped at the nearest apothecary, in search of aid, who directed him to Dr. Handyside's house in York Place. By the time he arrived there, consciousness had returned, but from the state of the pulse, Dr. Handyside advised his being cupped, which was done at once, Dr. Alison returning home afterwards. The after-effects of this seizure were in all respects similar to those described as having occurred on the first occasion—no uneasiness, no feeling of discomfort. At the time, it was thought that this attack was possibly connected with the fall upon the ice. The late Dr. Davidson saw Dr. Alison at this time, along with his other medical friends, and in consultation, it was resolved to try the effect of a seton in the back of the neck, which he continued until his death.

The fits recurred, as I have said, at intervals of about six weeks, until 1850, generally two in number, with slight giddiness between the attacks, and were followed by many hours of sound sleep, from which the patient awoke quite well. During 1850 they were more numerous, being eleven in number, with occasionally three fits at one illness. In 1851 there were fifteen, and these were now becoming more severe. In the following year thirteen, increasing in severity. In 1853 fourteen, two of which were followed by feelings of oppression and discomfort—sensations which, however, soon passed off. In 1854 the number of attacks was reduced to ten; but the separate epileptic fits were more numerous, much more severe, and followed by symptoms of cerebral congestion of a formidable character. For example, in April of that year, I find it recorded that he had six fits, followed, on return to sensibility, with headache and nervous excitement—the latter state continuing during a fortnight, and then going off entirely.

On the 23d of October, there having been four attacks since the one in April, at six, A. M., he had a fit, was well during the day, but at eleven at night he was again seized, and had eleven very severe attacks before the same hour next morning. These were followed for two or three hours by violent excitement, with constant motions of his arms, and great restlessness. I saw him early on that day, and found him quite insensible, almost comatose, with flushed countenance and turgid veins. His case at this time assumed a very formidable aspect, and it

appeared to me that recovery was doubtful. He was cupped, and as he was able to swallow when fluid was put into his mouth, an antimonial mixture was prescribed. Dr. Christison saw my patient with me in the evening, at which time he was returning to consciousness. On my visit next morning, I found there had been no return of the spasms since eleven in the morning of the preceding day, but the mind was languid, and at times incoherent. He expressed himself as feeling very ill, and that he was paralysed. On the 7th day of this attack he became suddenly delirious. Leeches were applied for the second time, and again on the following day, after which the delirium passed off, and he became quite calm, so that at Dr. Christison's and my visit, on the tenth day of the attack, he was again in his usual state of health, and in a week from this date he was able to walk out.

In 1855, the seizures numbered only seven, but the fits in all amounted to sixty, there having been, on the 4th of May, so many as eleven severe fits in twelve hours, but in the following year, even this formidable seizure was exceeded on 19th January, when from 10 o'clock on that, until 12 on the following day, he had twenty-two fits. This attack was altogether a very severe one, and resembled much the one described above, as occurring in October, 1854. In 1856, the seizures were eight, the fits eighty-six. In 1857, the seizures were seven, the fits sixty-two. In 1858, seven seizures and fifty-four fits. In 1859, the seizures were five, the fits fifty-nine.

The nature of the terrible attacks to which Dr. Alison had become so great a martyr, gradually underwent certain changes. They became less numerous, but the fits were greatly increased in severity, and during this year, the condition of my patient after the fits was very formidable, and most painful to witness—the delirium assuming more and more the maniacal character; and latterly the difficulty of restraint, even with the assistance of two or three male attendants, was very considerable. Although it was my custom to give my patient, during the stage of sleeplessness and nervous irritability, henbane with camphor and prussic acid, even whilst administering antimony, I had not thought it prudent to use opium, in consequence of the existence of so much cerebral congestion. With the sanction, however, of Dr. Smith, who saw Dr. Alison in a maniacal paroxysm with me in March of this year, I ordered large doses of solution of morphia and antimony to be given, so soon as the patient indicated signs of delirium. I find it recorded, that after five doses, at six or eight hours' interval, he fell asleep, and in nine hours awoke, calm, quite himself, and from this time he steadily recovered. This occurred on the fourth day

from the illness. Such was the usual effect for several future attacks.

On the 4th July he had seventeen fits, accompanied, as was the case latterly, with insensibility, during twenty-four to thirty hours, but this passing off under the use of cold to the head, leeches to the temples, antimonials and purgatives. On the approach of the maniacal delirium, he got the large doses of opium and antimony, with its accustomed good effect, producing sleep on one occasion for many hours—when he awoke quite well. Dr. Alison's last attack of illness was on the 20th of August, when he had six severe fits, and some of a lighter character. On the 23d, he had the usual doses of opium and antimony, producing sleep, after which he recovered well, so that I felt no hesitation in fulfilling my intention of going on my holiday, having arranged that my friend, Dr. Andrew Wood, should be sent for if requisite; and accordingly, on the 31st of August, he was requested to visit Dr. Alison at Woodville, and ascertained that, although he had been occasionally out driving since I had visited him a week before, he had been a good deal excited, with occasional delirium. Dr. Andrew Wood at his visit found him quiet; but as he became excited towards evening, he got a dose of henbane, and twenty-five minims of solution of morphia, without, however, producing sleep, so that next morning the dose was repeated, and about 12 o'clock with success, and he awoke quiet, and during the evening continued well; but at 11 at night of the 1st September he became delirious, and this state continued during the whole of the following day, notwithstanding the administration of morphia, wine, etc., by Drs. Smith, Wood and Brodie, who, from this time until the 22d, when Dr. Alison died, were most assiduous in their attendance.

I have the advantage of minute notes, kept for me, during my absence, by one who never left our patient's side, and the record there, from day to day, indicates the frequent changes from comparative quietness to complete maniacal excitement, till within a few days of dissolution, when my medical friends remarked the similarity betwixt Dr. Alison's state and that of a person sinking under an attack of typhoid fever. There were brief intervals towards the close when our patient was sensible, was able to express his thanks to those around him in his usual calm manner, and when he stated his belief that his end was approaching. But these peaceful moments were soon followed by excitement, characterized by violent spasmodic action and screaming, accompanied by a peculiar rotary movement of the hands, or by a condition very frequent in the earlier attacks, at a certain stage of the seizure, when he seemed lost in the

contemplation of some blessed vision, during which he expressed his belief that he heard the praises of the heavenly hosts, and that, amongst the number, he distinctly recognised the voices of very dear departed friends.

At this period of his illness, as upon former occasions, it was truly interesting to note the beautiful expression of his intellectual countenance, as he listened with rapt attention to these sounds, of the reality of which he, at the time, entertained no doubt. His return to consciousness from this state, he more than once characterized as a return from heaven to earth. Towards the afternoon of the 22d September his breathing became gentler and slower, and without the slightest struggle he passed away.

On my return home on the evening of that day from my holiday, I received, at the same time, the tidings of the illness and death of my much-esteemed friend and patient; the too considerate thoughtfulness of my friend and substitute, Dr. Andrew Wood, having led him to withhold the information of Dr. Alison's illness, from the fear that, were I made aware of his state, I would shorten the period of rest I had allotted to myself, and hasten to be with one of whom I had seen so much during the last ten years.

The *post-mortem* examination was performed about twenty-two hours after death, in presence of Professor Goodsir, Drs. Smith, Andrew Wood, Skae, Brodie, W. T. Gairdner, Haldane, and myself. Dr. Haldane has kindly furnished me with the following account of the appearances:

External Appearances.—The body generally, but more particularly the face, were much emaciated. The cadaveric rigidity was generally moderate, but the muscles of the neck were so firmly contracted, that they supported the head when the pillows were drawn from below it.

Head.—The scalp was thin, and almost perfectly bloodless. The skull-cap was of moderate thickness; there were some pretty firm old adhesions between it and the dura mater. On proceeding to remove the dura mater, it was found that the falx cerebri was very extensively ossified; its anterior portion (almost quite up to its insertion into the crista galli), for an extent of rather more than three inches, being converted into a firm bony mass, which had a rough irregular surface, presenting elevations and depressions which had corresponded to the sulci, and convolutions of the adjoining portions of brain; posterior to this large mass, there was a small ossification (about half an inch in length by a quarter in depth). On removing the dura mater a quantity of clear serous fluid escaped from the cavity of the arachnoid. The membranes of

the brain had a semi-opaque, milky appearance; there was considerable œdema of the pia mater, and much serous fluid upon the surface of the brain. The brain was removed before the ventricles were opened into, so that the quantity of serum contained in them could not be exactly ascertained; but as each lateral ventricle was much dilated, they must have contained at least two ounces of serum. The cerebral substance was healthy, though the walls of the lateral ventricles were rather soft. The cerebellum and pons were natural.

The weight of the encaphalon was 52 oz. av. There was considerable ossification of the arteries at the base of the brain.

Thorax.—There were some old cellular adhesions on each side of the chest. Both lungs were a little emphysematous anteriorly; congested and œdematus posteriorly.

The heart weighed 14 oz.; its muscular substance was soft and flabby. The aortic valves were natural; the mitral valve was contracted, barely admitting the points of two fingers; its edges were thickened.

There was a moderate degree of atheroma of the ascending aorta.

Abdomen.—The substance of the liver was natural. The gall-bladder was completely filled with gall stones of an irregularly cubical form, presenting smooth facettes; they consisted of cholesterine colored with bile pigment. There was not a trace of bile in the gall-bladder, but a small quantity of a whitish glairy mucus.

The cystic duct was obliterated. The other ducts were natural.

Each kidney was closely surrounded with fat, which also extended to a considerable extent into the pelves of the organs. The glands were rather smaller than natural; but with the exception of pretty numerous cysts, which varied in size from that of a small pea to that of a pin point, were sound in structure.

No other lesion found.

It is a frequent observation that anatomy reveals but little which can throw light on the pathology of epilepsy, and yet here we find an amount of organic lesion sufficiently remarkable, and capable, it may be inferred, of producing any amount of disturbance of the cerebral functions. These appearances, however, in many cases, may, after all, be possibly considered as the result rather than the cause of the malady, and yet I am disposed to look upon the existence of the foreign substance, with so rough a surface, occupying, as it did, so large a space in connection with the membranes of the brain, as in a great degree a source

of irritation, resulting in paroxysmal attacks of epilepsy and attendant symptoms, indicating a congested state of the vessels of the brain and its membranes.

I feel that I have already trespassed too long on the time of the society, with the details of a case which, remarkable as it is in many respects, I am aware owes its chief interest to the distinguished man who was so long subject to a disease, so obscure in its pathology and unsatisfactory in its treatment; and yet I know well, that anything, however minute, relating to the history of one so much and so justly beloved by his professional brethren, will be listened to with interest and respect. Many of us—members of this Society—can never forget the great and lasting advantages which we derived from our preceptor's guidance and prelections in the clinical wards of the Royal Infirmary, in which the philosopher and the physician were so admirably blended for the good of the patient, and the welfare and improvement of the student; the latter not only deriving instruction as to the method of investigating the nature of diseases and their appropriate treatment, but becoming imbued—if I may be allowed the expression—with a portion, perhaps but a small portion, of that logical spirit of reasoning, which formed so remarkable a characteristic of our distinguished teacher.

Dr. Alison has been removed from amongst us, but we shall ever bear in remembrance, as has been well expressed by a friend, "that strongly built bodily frame, which seemed as if it could defy disease and infirmity—that countenance beaming with intelligence and benevolence—that hand open as day to melting charity—that kindly voice—that heart so full of sympathy for human suffering—that vigorous, clear, manly, and persevering intellect, which was exercised untiringly for the good of his species." Of him it may in truth be said, "He rests from his labors, and his works do follow him."

The following note was read from Dr. James Struthers, who was detained from the meeting:

On the 12th January, 1852, Dr. Alison came down to Leith to see a case with me, and appeared in his usual health. He had just completed the examination of the patient, and was standing at the bedside, apparently considering the line of treatment to be pursued, when he began to utter a peculiar sound, very like that caused by smacking the tongue from the roof of the mouth, as in tasting anything. This he did regularly at intervals of two or three seconds; the sound was not loud, and appeared so natural that, until it was repeated three or four times, I took it as indicating that he had formed an unfavorable opinion of the case, while forgetting that he was

in the presence of the patient. But, on looking at him, I noticed the eyes vacant, and concluded that these were the premonitory symptoms of one of his fits, none of which I had previously seen. I took him quietly by the arm, saying that we would now go into the next room, and he followed me passively, walking steadily, and still uttering the sounds referred to. On getting into the next room, I spoke to him, but he gave me no reply, and would have fallen had I not caught hold of him and set him into a chair which was near at hand. He was now quite unconscious; the face was pale; the head drooped on the chest, and there were frequent slight twitchings of the face and neck, but no cry nor any convulsions of the limbs. I procured some brandy, and, in two minutes after he had been placed in the chair, got him to swallow a little; on which he immediately looked up, and after sighing once or twice, asked, "have I been ill? have I had a fit?" Not more, I think, than five minutes had elapsed, from the first appearance of the symptoms, till he began to speak of the case we were visiting; and, to my surprise, entered minutely and most correctly into all the points of it, embracing as well the history he had got from me on our way to the house, as the symptoms he had noticed for himself. Not a single fact seemed to have been effaced from his memory; and he gave a clear opinion of the case to his friends. In ten minutes we returned to the patient's room; and so quietly had the attack passed over, that, to this day, the relatives of the patient are unaware that any thing unusual occurred on that occasion.

Much against Dr. Alison's will, I insisted on seeing him home; and, on the way, he paid a visit to a patient of his in Bellevue Crescent. On the way home he spoke very freely about his illness, and I shall never forget his conversation on this occasion. He said: "They tell me that it is epilepsy that I have, but I don't think so; it is not true epilepsy. I don't think that my illness will soon prove fatal; there is old Judge Pennefather—a man near eighty years of age—he has had similar attacks for years past, and still presides as one of the judges in Ireland, with his faculties unimpaired. I think my case is very like his." He further said: "You will probably be present when my head is examined, and depend upon it you will find no disease of the brain. Whatever disease there may be you will find it in the membranes, and, from what I have observed in similar cases, you will probably find it to consist in a general thickening of those on the upper surface of the brain; but, remember, I have told you there will be no disease of the brain itself." He asked me what I thought of the attack I had just witnessed, and, on my saying that I con-

sidered it a well-marked instance of the "petit mal" he seemed annoyed, saying, "well, perhaps it was; but my complaint is not true epilepsy."

Dr. Newbigging observed, that Dr. Alison's opinion of the nature of his own case had subsequently undergone a change; of late years he had frequently expressed the opinion, that a tumor would be found in his brain. Dr. N. further remarked, that there could be no doubt that Dr. Alison's was a well-marked case of epilepsy.

Dr. Haldane stated, that on examining microscopically a thin section of the ossification of the falx cerebri, it was found to present a structure very analogous to that of true bone. Some portions of the section had an amorphous appearance, while in other places there were distinct bone cells and canaliculi. Such an appearance was frequently found when ossification took place in fibrous members. Dr. Haldane also observed, that though the weight of Dr. Alison's brain (52 oz.) did not much exceed the average, it should be borne in mind, that at the time of death it was considerably atrophied. This was manifest from the thickened condition of the membranes, and from the amount of serous fluid found on the surface and in the ventricles of the brain.

Dr. Andrew Wood alluded to the calm and philosophic spirit in which Dr. Alison had borne his long illness. Far from being in a state of suffering, Dr. Alison had enjoyed the last years of his life. Dr. Wood well remembered an observation which Dr. Alison had made on one occasion; speaking of some one who was subject to epilepsy, he (Dr. Wood) had remarked, poor so and so has had another epileptic fit, "Oh," said Dr. Alison, "do not call him *poor*, a man with epilepsy is not to be pitied but to be envied." And, then he stated, that during his attacks, he was in a state of elysium; he appeared to be in another world; he joined and conversed with absent friends; and it was matter of regret to him when he recovered consciousness of the external world.

2. *The late Dr. R. Todd, of London.*

Robert Bentley Todd, M. D., F. R. S., whose sudden and unexpected decease it is our melancholy duty to record, was the second son of Charles Hawkes Todd, Professor of Anatomy and Surgery in the Royal College of Surgeons in Ireland. Dr. Todd was originally intended for the bar, and had kept his terms in Dublin, his native city, when the death of his father occurred in March, 1826, at the early age of forty-six, soon

after he had attained the highest eminence as a surgeon in the Irish metropolis, and before he had time to make sufficient provision for his large family of sixteen children, in whose number the removal of the distinguished subject of this notice is the first breach. In consequence of the loss of his father, and of the circumstances under which it took place, Mr. Todd was advised by several medical friends, (particularly the late Mr. Peile who ever entertained an affectionate regard for him, and a notice of whose death appeared in our columns only two years ago), all of whom, in the handsomest manner promised to assist him in obtaining the necessary qualifications, to adopt the Medical profession. This advice was followed, and with what success is known to the medical world. As resident pupil during two years in the House of Industry Hospitals, Mr. Todd availed himself to the utmost of the vast opportunities afforded by these Institutions for acquiring an extensive knowledge of pathological anatomy, which undoubtedly laid the solid foundation of his subsequent success as an eminent physician. As we write this we have before us an introductory lecture delivered in January, 1827, in the Richmond (now the Carmichael) School of Medicine, by the late distinguished Mr. Carmichael, and published in compliance with a request contained in an address from the pupils of the School, among the signatures to which the name of R. B. Todd appears, in which lecture it is stated that the House of Industry "has attached to it three distinct hospitals, a Fever, a Medical, and a Surgical Hospital, together containing at present 452 patients." In this lecture Mr. Carmichael points out the peculiar advantages presented by these institutions for the study of morbid anatomy.

Having passed the Irish College of Surgeons, on May 25, 1831, it was Mr. Todd's intention to have settled in Dublin, but he thought it advisable before doing so to spend a winter Paris. On arriving, however, in London, with the purpose of proceeding to France, an offer was made to him of the Lectureship on Anatomy in the Aldersgate-street School of Medicine, which he thought it prudent to accept. Soon after, having acquired the warm friendship of Mr. H. J. Rose, Principal of King's College, he was appointed Professor of Physiology and Morbid Anatomy to the College. Dr. Todd took an active part in the foundation of King's College Hospital, his connection with which he resigned only a short time before his death. He was the originator of the St. John's Institution for the education of nurses; and the plan drawn up by him having been laid before the Archbishop of Canterbury and the Bishop of London, and having received the sanction of those prelates, was acted on in the first instance in King's College Hospital,

and has since been adopted throughout England in the formation of sisterhoods.

Dr. Todd was in his fifty-first year, having been born on April 9, 1809. He was educated in Trinity College, Dublin, but, having subsequently taken an *ad eundem* degree in arts in the University of Oxford, he proceeded to the degree of M. D. in Pembroke College, in 1836; and, in 1837, he became a Fellow of the Royal College of Physicians of London. He was elected a Fellow of the Royal Society in February, 1838. On April 9, 1844, the thirty-fifth anniversary of his birth, he was admitted to the Fellowship of the Royal College of Surgeons in Ireland. Dr. Todd leaves a widow and four children, the youngest of whom, a son, is at present at Eton. His elder brother, the Rev. James Henthorn Todd, D. D., is a Senior Fellow of Trinity College, Dublin, and has for the last four years been President of the Royal Irish Academy.

We have but little to add to the short account of his illness which we gave last week, except (1) that his father died of hæmatemesis; but in his case the cause was ulceration of the duodenum; (2) that, for about three years, albumen had been detected in Dr. Todd's urine on different occasions, and occasionally a little sugar; (3) that the amount of hæmorrhage was very great, the cirrhoses of the liver well marked, and the kidneys much congested. Neither head nor chest were examined, but shortly before death both heart and lungs had been carefully examined, and found perfectly healthy.

It would be wrong to conclude this notice without some reference to the high position in his profession attained by Dr. Todd at an early age, and without some attempt to estimate the influence of his labors in introducing physiological truths into medical practice and teaching, and in the spread—for good or ill, as it may be—of the stimulant as opposed to the anti-phlogistic and expectant systems. But we must reserve a critical labor of this kind for a more fitting opportunity, merely adding here that his last work, just published, was completed only a few days before his death, and appeared between the time of his death and burial. It is singular that, in the preface, he gives a summary of the principles of treatment it has been the work of his life to uphold. It is thus that he who has so lately gone speaks to those who remain to profit by his labors:

“There will (the author believes) be found in the following pages evidence enough to show that the ordinary so-called anti-phlogistic treatment is unnecessary (to say the least) for the cure of acute internal inflammations; and that the supposed necessity for such treatment rested upon an untenable hypo-

thesis respecting the nature of inflammation and of fevers, and cannot be regarded as a legitimate induction from accurately observed clinical facts.

"The conclusions, which the clinical observations detailed in the lectures tend more or less to establish, may be summed up in the following propositions:

"1. That the notion so long prevalent in the schools, that acute disease can be prevented or cured by means which depress and reduce vital and nervous power, is altogether fallacious.

"2. That acute disease is not curable by the direct influence of any form of drug or any known remedial agent, excepting when it is capable of acting as an antidote, or of neutralizing a poison, on the presence of which in the system the disease may depend (*materies morbi*).

"3. That disease is cured by natural processes, to promote which, in their full vigor, vital power must be upheld. Remedies, whether in the shape of drugs, which exercise a special physiological influence on the system, or in whatever form, are useful only so far as they may excite, assist or promote these natural curative processes.

"That it should be the aim of the physician (after he has sedulously studied the clinical history of disease, and made himself master of its diagnosis) to inquire minutely into the intimate nature of these curative processes—their physiology, so to speak—to discover the best means of assisting them, to search for antidotes to morbid poisons, and to ascertain the best and most convenient methods of upholding vital power.

"If one may venture a suggestion respecting the future of pathology, and of practice founded on it, it would be that a time is not far distant when all men who practice medicine in a scientific spirit, and divested of the trammels of routine, will discard the distinction of acute inflammations and acute disease in general, into asthenic and sthenic—that all these maladies will be regarded as more or less asthenic, and as promoting more or less an undue waste of tissue, and that, in treatment, an object of primary importance will be the early adoption of means to uphold vital power, and the watchful and continued use of them throughout the duration of the case."

* * * * *

"The author has not referred to the hypothesis suggested by some who admit the necessity of a considerable modification of practice in the treatment of acute diseases—namely, that the type of disease has undergone material change of late years, and has assumed a much lower grade as regards vital power, owing either to some change in the human constitution,

or to some atmospheric modification which has taken place in recent times. It is supposed that this modification dates from the period of the first introduction of cholera into these countries.

"Upon this point the author can say that he has been a not careless observer of disease for several years antecedent to the first cholera epidemic. At no time was the antiphlogistic treatment (so called) more rife than some years prior to the cholera epidemic, and many excellent observers were then beginning to see that it was carried too far, and was inadequate for its object in either cutting short or curing disease. Certainly opportunities of studying the morbid anatomy of acute diseases, pneumonia, pericarditis, endocarditis, pleurisy, were then, and for many years afterwards, much more common than now, when such inspections are among the least frequent in our hospital theatres. The author has notes of many cases treated in this way, which he is confident would have recovered, had vital power been not only spared but upheld.

"The author would venture to doubt the proposition that disease is of a lower type now than it was twenty or thirty years ago. Certainly we have long been spared those ravaging epidemics of fevers, dysenteries, exanthemata, all of which exhibited innumerable examples of the lowest type of disease. Their comparative disappearance is now due in part, no doubt, to the improved condition of the people, better food, better clothing, cleaner and better ventilated dwellings, and to many wise preventive sanitary measures. But, on the other hand, population is vastly increased, over-crowding exists to a large extent, and were disease of a very low type, it would spread freely, and epidemics would be common. It is well-known that such is not the case, and that the fevers which were formerly the scourge of the poor, occur now on a very limited scale."

3. *Dr. Montgomery, of Dublin.*

Last week we announced the death of the above distinguished member of our profession, intelligence of his decease having reached us just as we were going to press. William Fetherston H. Montgomery, whose name, to use the words of Dr. Arneth, of Vienna, "is known and honored wherever midwifery is practised," received his education in the University of Dublin, having entered Trinity College, in the year 1817, under the Rev. Dr. Wall, the present learned and venerable vice-provost of the University. In 1820, Mr. Montgomery obtained a

scholarship, a prize within the reach only of those whose classical attainments are of the highest order. He graduated as A. B. in 1822, and took the degrees of A. M. and M. B. in 1825. He did not take the degree of M. D. until 1852. He became a licentiate of the King and Queen's College of Physicians in 1825, and in 1829 he was elected a fellow of that body. He subsequently filled the office of president of the college. At an early period of his professional career, Dr. Montgomery gave lectures on midwifery to large classes of pupils at his house in Coffe street, Stephen's-green. To his exertions the foundation of the professorship of midwifery by the College of Physicians was mainly due, and he was himself the first elected to the chair he so ably filled during the lengthened period of thirty years. As a lecturer, his style was particularly clear and pleasing, and he had peculiar faculty in communicating to his hearers the copious information he himself possessed. His address on the resignation of his professorship is to be found in the pages of this journal. Dr. Montgomery's contributions to medical, and more particularly to obstetrical, literature were numerous and varied. They are to be met with chiefly in the first and in the present (or second) series of the *Dublin Journal of Medical Science*. In addition he contributed to the *Cyclopædia of Practical Medicine* the articles "Personal Identity," "Signs of Pregnancy and Delivery," "Rubeola," and "Succession of Inheritance-Legitimacy." But it is on his classical work on the "Signs and Symptoms of Pregnancy," and on his observations on the spontaneous amputation of the foetal limbs in utero, that Dr. Montgomery's lasting fame must mainly rest. In the former especially, he has erected to his own memory a "*monumentum ære perennius*." We have too recently recorded our opinion of this great work, to render it necessary to return to it on the present occasion. To his indefatigable zeal in the cultivation of science the extensive Obstetric Museum, the work of his own hands, formerly preserved in the College of Physicians, but now enriching Queen's College, Galway, will, it is to be hoped, long testify.

Dr. Montgomery was sixty-two years of age. His death, though not unexpected, was rather sudden: he had for some time suffered from excruciating pains in the chest, and other symptoms of cardiac disease. His decease, as we have already stated, occurred on the morning of Wednesday, December 21st, 1859, at his residence in Merrion square. Dr. Montgomery was an honorary member of several foreign medical societies.—*Medical Times and Gazette*.

4. *Dr. Thomas Alexander*, late Director-General of the British Army.—(From the Times.)

Not only the Medical Service, but the army and the country at large, have sustained a great loss in the death of Dr. Alexander, who has been taken from us in the midst of a career which promised the largest results that could be effected by untiring industry, unswerving honesty, a clear intellect, the highest practical knowledge, and the warmest sympathies with the body over which he was so recently called to preside. The feelings of private friendship, however lively, cannot lead to exaggeration in eulogising the kind, skillful, large-hearted physician who, though very young comparatively as regards the station he occupied, had given a long life to the service of his country with such zeal and energy as brought great profit to it and ultimate honor to himself. The following dry statement of his services will best illustrate the events of a life now brought prematurely to a close :

Thomas Alexander served 25 years and three months on full pay, 19 years and six months of which were passed on foreign service thus—in the West Indies, 5 years and 6 months; in Nova Scotia, 4 years 7 months; in Canada, 3 years 2 months; at the Cape of Good Hope, 2 years 2 months; in Turkey and the Crimea, 2 years 4 months; in Canada, 6 months. He entered the service on the Staff in 1834, and proceeded to the West Indies, where he did duty for the period above stated, at the end of which he came home in charge of invalids. He remained at home only nine months, when he embarked for Nova Scotia, where he did duty till he was removed, in August, 1846, as Second-Class Staff-Surgeon, to North America, where he served with the Rifle Brigade as Regimental Assistant-Surgeon, till he embarked for the Cape of Good Hope in 1851, and served with the 60th Rifles for the next two years throughout the Caffre war. He was principal medical officer the expedition despatched beyond the Kei, and he was thanked in general orders for his services throughout the war. In 1854 he was promoted to the rank of First-Class Staff-Surgeon, and received orders to join the Turkish Expedition. He was in charge of the Light Division under Sir George Brown, and landed at Gallipoli, with the first detachment of the expeditionary force, consisting of his old comrades of the Rifle Brigade, and a detachment of Royal Engineers, Sappers and Miners, on March 6. With the Light Division he remained to the close of the war. At the Alma his tenderness, his inexhaustible endurance, and noble devotion in the

most terrible trial to which a surgeon, overwhelmed with calls on his utmost powers, and poorly provided with the means of relief, could be exposed, were especially remarkable. At Inkerman, for hour after hour, day after day, he toiled through scenes which those who have not witnessed a battle-field and the terrors of the hospital-tents can never imagine or conceive, upheld by the noblest sense of duty; and many men now alive can bear witness to the heroic calm and skill which saved life and limb for them, and the prodigality and care he bestowed on others, regardless of everything but his sacred duties. In Lord Raglan's dispatch he is described "as deserving to be most honorably mentioned." All through the winter he never left his post—nay, more, from the time he joined the Light Division till the British army quitted the shores of the Crimea, he never was absent from his duty a single day. On January 12, 1855, he was appointed Deputy-Inspector-General, and he went to Kertch with Sir George Brown as principal medical officer of the expeditionary force. In General Codrington's despatch of March 18, 1856, in answer to an address from the House of Commons, Dr. Alexander is also mentioned, and he was recommended by Dr. Andrew Smith for promotion to the rank of Local Inspector-General for service during the Russian war. Dr. Alexander remained at home just one month and twenty-one days, when he was again ordered for service in Canada as principal Medical officer; but, after performing that duty for six months, Lord Panmure nominated him one of the Royal Commissioners to inquire into the sanitary state of the army, and he returned to England to discharge the functions of his appointment. He was also selected to draw up a new code of regulations for the management of barracks and hospitals, and, on the retirement of Sir Andrew Smith, on June 22, 1858, Dr. Alexander was appointed Director-General of the Army Medical Department, which appointment he held up to the day of his death. He was also one of the Honorary Surgeons to Her Majesty, and a Companion of the Bath. About three weeks ago he was interrupted in the usual assiduous discharge of his duties by an attack of gout, complicated with an inflammatory condition of the venous system. A few days ago the symptoms became alarming, but he was better on Tuesday evening. In the course of the night he was, however, severely attacked; and he died at seven o'clock on Wednesday morning, at his residence in Norfolk-square, the immediate cause of death being, it is supposed, determination of gout to the heart. He leaves a widow to mourn his loss, and in her grief she has many deep sympathisers, for few men ever had a larger number of sincere friends among those whom he

admitted to his acquaintance than Dr. Alexander. Simple in his taste and frugal in his habits, though generous and genial in his demeanor and conversation, he did not seek the society of the great; but, retired within the circle of his duties and of his private friendships, he there gained the approbation of his conscience and the love of those among whom he lived and labored.

EDITORIAL AND MISCELLANEOUS.

PROFESSOR CHARLES FRICK.

A few months only have passed away since we met, for the first time, CHARLES FRICK. Pleasant memories have, ever since, remained with us of that short but merry meeting, when the gay yet gentle manner, the melting eye, and the well-bred carriage of our new acquaintance made its first and most favorable impression. And these recollections will be ours forever. We can never meet again; for, with an unusual suddenness, Death has seized its victim in the very bloom of his life, in the zenith of his career, and we have nothing left, but with halting, solemn words, to record his untimely end.

This sad event is of such recent date that we can only, at this time, give a few particulars, which we have found in the Baltimore papers. The most reliable statement we have derived, is from the *Patriot*, of Monday, the 26th, which reads as follows:

Death of Professor Frick.—It becomes our painful duty to announce the death of Professor Charles Frick, a member of the Faculty of the University of Maryland, School of Medicine, and a physician of great promise, which took place yesterday afternoon, at his residence, 103 Park street, after a

short illness, from a disease known as diphtheria, a throat affection. Prof. Frick has been unwell since Wednesday of last week, with a soreness of the throat. About 3 o'clock yesterday morning, the disease assumed a threatening character, and Dr. Miltenburger, the associate of Prof. Frick in the Faculty, was sent for, and performed the operation of tracheotomy, the opening of the wind-pipe, which gave some relief—but medical skill was of no avail, and between 12 and 1 o'clock yesterday afternoon, he expired. Prof. Frick had not yet attained the prime of life, being only about 37 years of age. He graduated, with distinguished honors, at the University of Maryland, and was called to its Faculty about two years ago—previously to this he held a similar position in the College of Pharmacy. He was a son of the late Judge Frick, of this city, and leaves a widow and one child. This morning a meeting of the students of the University of Maryland was held, for the purpose of taking some appropriate action in reference to this sad event.

We leave to older and abler friends, the duty of preparing for the pages of this journal, in whose prosperity he felt a lively interest, a becoming memorial of his life and professional labors. In him we have lost a coadjutor to whom we were looking, with anxious hope, for much literary help and comfort. But this is as nothing when compared with the unexpected blow which his early death gives to the large circle of his personal and professional friends, and especially to the Institution, of which he was an honored member. The following resolutions, prepared by the students of the University of Maryland, on this melancholy occasion, are the best evidence of his faithfulness and ability in the discharge of his official duties :

Whereas God, in His infinite wisdom, has seen fit to remove from our midst our much respected and beloved Professor, Dr. CHARLES FRICK, while faithful at his post, in the arduous duties of his profession ; therefore,

Resolved, That the Medical Class of the University of Maryland have heard, with feelings of deepest sorrow, of the death of their much beloved preceptor and friend, Dr. FRICK.

Resolved, That in his death the Medical Class have sustained a loss which cannot be repaired ; the Faculty a valuable and scientific associate ; the community at large a highly esteemed and zealous physician.

Resolved, That while his industry and attainments were but an earnest of what he would have accomplished had his life been pro-

longed, yet we shall ever love and remember the friendship and warm heart of him who, though passed from earth, "still lives."

Resolved, That the Class tender their heartfelt sympathy to his family in their deep affliction for the loss of one who, as husband and father, was ever loving and kind.

Resolved, That the Class, as a further mark of respect to his memory, will attend his funeral in a body, and will wear the usual badge of mourning for thirty days.

Resolved, That a copy of these resolutions be sent to the family of Dr. FRICK, and be published in the Baltimore *Exchange, Sun* and *American*.

EDWARD WOOTTEN, Chairman.

ALEXANDER BEAR, M. D., Secretary.

MEDICAL COLLEGE OF VIRGINIA—ANNUAL COMMENCEMENT.

The Mechanics' Hall of Richmond was crowded, in spite of the inclement night, on Friday, March 8th, to witness the commencement exercises of the Medical College of Virginia, and the ceremony passed off with unusual eclat.

Professor Joynes, Dean of the Faculty, presented the diploma of the Institution to the following gentlemen:

John M. Adams, Alabama; Wm. J. Allen, Lunenburg co., Va.; James M. Armstrong, Augusta co., Va.; William W. Arnold, M. D., Missouri; John B. Blanton, Arkansas; L. C. Bogard, Mississippi; David H. Brumback, Page co., Va.; John H. Cameron, Rockbridge co., Va.; Elijah L. Carter, Richmond, Va.; John J. Crowder, Mecklenburg co., Va.; Wm. V. Croxton, King William co., Va.; Isaac Curd, Goochland co., Va.; Samuel H. Coffman, Mississippi; Samuel R. DANCE, Prince Edward co., Va.; Robert B. Dandridge, Henry co., Va.; Jos. W. Davenport, Mississippi; C. Watson Doyle, Dinwiddie co., Va.; Emmett A. Drewry, Southampton co., Va.; Edward Eppes, New Kent co., Va.; John C. Farmer, Missouri; John H. Fontaine, Hanover co., Va.; M. L. Garrison, Warren co., Va.; George E. Gee, Lunenburg co., Va.; Isaac R. Godwin, Henry V. Gray, Botetourt co., Va.; Elijah H. Grigg, Buckingham co., Va.; Colin J. Hackett, Louisa co., Va.; Philip S. Hancock, Chesterfield co., Va.; J. Wesley Harrison, M. D., Sussex co., Va.; Benjamin A. Hill, Alabama; William O. Hill, Rockingham co., Va.; Charles M. Hunter, Caroline co., Va.; Thomas L. Hunter, Jr., King George co., Va.; George B. Jennings, Rockingham co., Va.; Joseph M. Keyes, Mississippi; Thomas B. B. Layne, Matthews co., Va.; T. Fishburne Lee, Alabama; John P. Lipscomb, Pittsylvania co., Va.; Phipps Lloyd, Richmond city, Va.; A. Sidney Loving, Nelson co., Va.; George T. Luckett, M. D., Alabama; Francis E. Luckett, M. D., Richmond, Va.; William W. Marston, New Kent co., Va.; C. G. Massie, Goochland co., Va.; B. H. May, Petersburg, Va.; W. M. Mayes, Alabama; Hunter H. McGuire, M. D., Winchester, Va.; John W. McIlhany,

Fairfax co., Va.; Bayard L. McIntosh, Georgia; Archibald S. McKeithen, J. G. Michael, Alabama; William E. Michie, Richmond, Va.; Thaddeus C. Montague, Northumberland co., Va.; James N. Moorehead, Hampshire co., Va.; Thomas E. Moorman, Campbell co., Va.; J. Andrew Morsen, Richmond city, Va.; John B. Newton, Westmoreland co., Va.; William Winter Payne, Fauquier co., Va.; M. D. Parham, Brunswick co., Va.; Lewis S. Pendleton, Thomas P. Perkins, Louisa co., Va.; William P. Robinson, Essex co., Va.; Isaac A. Robinson, Botetourt co., Va.; Thomas Rowe, M. D., Richmond city, Va.; Joseph H. Ryland, Mississippi; N. Bayard Sadler, Georgia; John C. Sneed, Nelson co., Va.; Joseph W. Southall, Amelia co., Va.; Joseph H. M. Sykes, Southampton co., Va.; H. Cabell Tabb, Richmond city, Va.; Sterling S. Tarpeley, Mississippi; Samuel A. Taylor, North Carolina; Benjamin B. Temple, Fredericksburg, Va.; George W. Thomas, Jr., Georgia; Newton J. Thompson, William M. Thompson, Alabama; Edward H. Toone, Mecklenburg co., Va.; Washington L. Vaughan, Nelson co., Va.; Watkins Warren, James City co., Va.; Robert T. Wilson, Mississippi; John W. Wood, Alabama; Landon A. Woodson, Goochland co., Va.

Dr. A. E. Peticolas, Professor of Anatomy, delivered a Valedictory Address of more than usual brilliancy, and some interesting remarks from James Lyons, Esq., one of the Trustees, deserve our notice.

The Committee of Award, Drs. Patteson, of Richmond, and Claiborne, the senator from Petersburg, having selected the essay signed "Cupris," as the one best worthy to receive the prize of \$100, presented by Dr. Thomas D. Warren, of North Carolina, to the best thesis of the session, Professor Gibson announced the name of the successful competitor, Dr. ELIJAH L. CARTER, of Richmond, who received a check for the amount, from the Dean.

The friends of this Institution, who have seen it struggling for years against many adverse circumstances, will rejoice to know that it has, at last, overcome all the obstacles which have heretofore impeded its onward progress, and that a career of prosperity and usefulness may be now reasonably anticipated. The liberal donation of \$30,000 by the Legislature of Virginia will enable the Trustees to erect a large and commodious Hospital attached to the College, serving the double object of conferring vast benefits to the public, by affording all the advantages of such institutions, and, at the same time, offering to the student ample and unrestricted opportunities of studying disease at the bed-side under the most favorable circumstances. This well-timed liberality will also add largely

to the means of illustration, so necessary to a satisfactory and attractive system of lectures.

MEETING OF RICHMOND MEDICAL STUDENTS.

At a meeting of those students who lately seceded from Northern Institutions, and now matriculants at the Virginia Medical College at Richmond, held January 23d, 1860, M. H. Thompson, of Alabama, was called to the Chair, and Emmett A. Drewry, of Virginia, appointed Secretary.

Upon motion, a committee of seven was appointed to draft a preamble and resolutions expressive of the object of the meeting.

After due deliberation, the following were reported and unanimously adopted :

Whereas, it has been currently reported by a portion of the Northern press, and by individual correspondence, that a number of those medical students who had lately left Northern for Southern Institutions, was less than one-half of those at first reported, and that the greater part of those had returned, dissatisfied with the step they had taken, and with the course of instruction given at this place and in the South generally, we feel it to be due to ourselves, and to all who are interested, to correct this erroneous rumor, and give a correct statement of the facts; therefore,

Resolved, That we wish to make known the fact, that two hundred and fifty-seven left the city of Philadelphia, on the evening of the 21st of December, 1859, for Southern Colleges, and we believe that fifty or seventy-five more followed in less than ten days thereafter; that, of the whole number, about two hundred and seventy-five were from the Jefferson Medical College of Philadelphia, about forty from the University of Pennsylvania, and the remainder from the Pennsylvania College of Philadelphia; that the difference in the number of students seceding from the above institutions is due to the difference in the number of Southern Students attending each institution—the Jefferson College having suffered most, from the fact that it was chiefly sustained by Southern patronage.

Resolved, That so far as we have been able to ascertain, and information has been sought with the specific object in view, there has been but one who has returned with the determination to remain and continue his medical studies.

Resolved, That we are happy to announce the fact, that the movement has met the cordial and emphatic approbation of our parents or guardians and the enthusiastic endorsement of the whole South, with scarcely a dissenting voice.

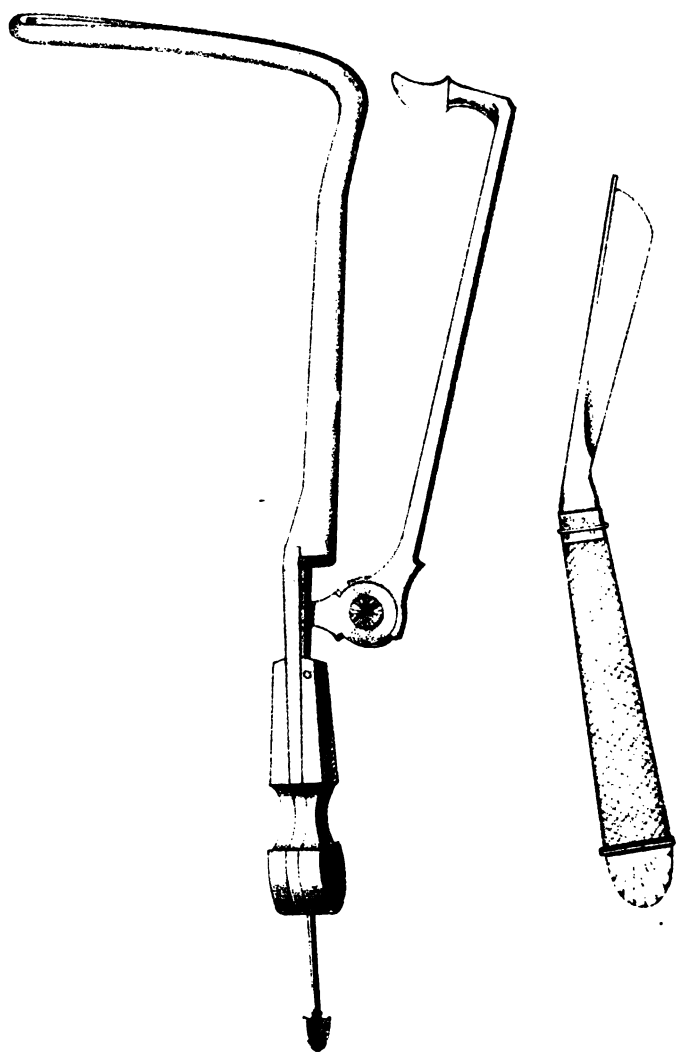
Resolved, That we have neither expressed nor entertained the slightest dissatisfaction with the course of instruction, as conducted in this College, but, on the contrary, we have realized the fact, that the Faculty, in point of practical ability to instruct in all branches of the profession, are fully equal, if not superior to those of the Northern Schools we left, and, in some respects, the facilities of medical instruction are greater.

Resolved, That a copy of these resolutions be transmitted to the New York "Herald," with the request that they may be published, and all Southern journals to give an insertion.

B. J. Field, Ark.; N. B. Sadler, Ga.; J. M. Keyes, Miss.; J. W. McIlhenny, Va.; W. M. Mayes, Ala.; R. T. Wilson, Miss.; J. B. Fontaine, Va.—*Com'tee.*

M. H. THOMPSON, Chairman.

EMMETT A. DREWRY, Secretary.



SMITH'S LITHOTOME

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ART. I.—*Clinical Lecture on Lithotomy.* Delivered at the Baltimore Infirmary. With a Plate and Description of his Lithotome. By Prof. N. R. SMITH, of the University of Maryland.

IN the case of the young man before us, aged 20 years, I present you with an example of probable lithiasis. I have not yet struck the stone in his bladder, but the symptoms are very characteristic. His countenance has the impress of physical suffering—his complexion is anemic—his person wasted. He has painful micturition at frequent intervals, and with cystic tenesmus. He has the usual pain in the glans penis. The flow of his urine is sometimes suddenly arrested as by a ball valve. Any jarring succussion of his body causes pain and excites tenesmus. He has often passed gravel and sand.

Nevertheless, all these symptoms are sometimes fallacious. They were nearly all present in a case which I examined a few days since, and yet there was no stone. We can rely with confidence upon nothing but the sound. I, therefore, proceed to examine him with that instrument.

You perceive that it enters with facility—the urethra being capacious. I have often found it preternaturally so where stone

exists. I strike the stone at once. Those who are near me hear the click of the steel upon the foreign body. A mere chafing of the instrument upon a rough surface would not be conclusive. A portion of the mucous surface of the bladder is sometimes like sand-paper, caused by false membrane with sabulous particles imbedded.

This young man has suffered, probably from stone, for four years. It began with a paroxysm of severe distress, probably at the moment the calculus first entered the bladder, the nucleus having been formed in the kidney. He has had intervals of comparative ease, interrupted by paroxysms of severe suffering, commonly called pits of stone.

Although he entered the house but yesterday, his condition justifies an immediate operation. His pulse, it is true, is weak and morbidly frequent, but it is not febrile, nor is there much inflammation of the bladder—there being neither tenderness nor tumor in the hypogastrium, nor much mucus voided with his urine. I see no propriety in a moment's delay, his bowels having been recently well evacuated.

In this case I perform lithotomy. I shall explain, on a future occasion, why I reject lithotripsy in this instance.

I shew you the instruments which I have employed for near thirty years, and which I have used in more than a hundred cases. The staff is a silver canula, with a slightly-spiral fenestrum cut out of its dorsum, and continued to near its point; along this the knife glides. You see the cutting director attached to the handle of the instrument by a strong hinge. This has an angle about an inch from its lower extremity, and at its end is a cutting point, like that of a broad scalpel. On the inferior border of this angular portion is a groove, which receives this, back of the knife. When, as the hinge allows, you extend the director, it stands out at right angles to the shaft. When you depress it, you see the scalpel point enters the fenestrum of the staff at the dorsum, and cannot deviate from it. In the hollow of the staff is a short cylinder, concave towards the handle. To the centre of the concave end is attached a fine, flexible steel wire, which passes

up through the handle of the instrument along a small canal. The cylinder glides freely along the canal of the staff, and drags the wire index where the knife encounters it in the staff.

I now proceed with the operation, the patient being placed in the usual attitude, and chloroform having been administered.

You see I introduce the staff with ease, and touch the stone with it. I carry the handle well forward and to the left side. I now bring down the hinged-cutting director, and with precision apply its point to the integuments on the left of the anus, and nearly on a level with its anterior margin. It is thus directed somewhat obliquely upward and forward, behind the bulb of the urethra, toward the membranous portion. I now press the director firmly down, and it cuts its way into the hollow of the staff, between the bulb of the urethra and the cruss of the penis. It is firmly fixed, and cannot change its place.

I now apply the back of the gorget knife, the handle of which has an angle with the blade, to the groove in the cutting director, and penetrate the hollow of the staff. I now press the body of the staff well to the right side, so as to make more room for the incision in the left perineum, and I cause the knife to glide along the spiral opening in the staff, directing its edge obliquely outward and downward. You see that it drags along with it the wire index, which causes no impediment. I have reached the extremity of the staff in the bladder. I now withdraw the knife, and, as I do so, dilate the outer portion of the wound.

You see me now introduce my finger before I withdraw the staff. I penetrate the bladder with it—the incision is sufficiently free. I now raise the cutting director, and withdraw the staff, retaining the index finger of the left hand in the wound.

Guided by the finger, I now introduce these forceps, (comparatively small and short.) I seize the stone without difficulty, and am now attempting its extraction. I feel it break

in the forceps, it being friable. I extract the principal portion. I feel often fragments with the finger. You see I have no difficulty in seizing them. I reach every portion of the interior of the bladder with the finger. I have now extracted the last fragment, and feel that the bladder is free. I shall not inject the bladder, because I explore it so freely with the finger, and feel that nothing remains. The operation is completed. You observe there is but little hemorrhage—none requiring any mechanical expedients to arrest it.

I shall introduce no canula, which I often use. I omit it in this case, because the opening is free and the perineum not deep, and because, in the recent case of Gov. Hicks, I found it to create irritation.

In Braithwaite's Retrospect, No. 39, you will find a description and plate of an instrument, the invention of which is claimed by Mr. Corbett, of the Glasgow Royal Infirmary, and which is identical with mine, except that the bend in the staff is angular and not abruptly curved as mine is. This deviation only impairs the usefulness of the instrument.

I published an account of my instrument in 1831, and, from that time to the present, have employed it in presence of the medical classes of the University of Maryland.

The advantages which I claim for this instrument are, that it greatly simplifies and abbreviates the operation—that it gives unity and continuity to the incisions—that it obviates the danger of wounding the artery of the bulb, and the danger of the slipping of the knife or gorget from the groove of the staff.

Feb. 18th.—We have before us the patient on whom, on the 15th instant, I performed the operation of lithotomy. He is doing well—has had no hemorrhage, no rigors, no considerable pain, no fever. There is now but little doubt of his perfect recovery.

ART. II.—*On the "Head Symptoms" in Typhoid Fever.* By
J. B. BROCK, M. D., of Spotsylvania co., Va.

THE frequency and gravity of the "head symptoms" in typhoid fever, and the failure of anatomical investigations to reveal any constant morbid condition of the brain or its membranes, by which to account for them, has been to me a source of much perplexity.

In a large number of cases, the departure from a healthy condition of the brain is very slight, by no means proportionate to the gravity of the symptoms during life. The lesions which have been observed are neither constant nor characteristic. Wood says: "That no satisfactory connection has been traced between the lesions discovered after death, and the symptoms during life." Bartlett says: "There is no ascertained relation between the cerebral symptoms during life, and the pathological condition of the brain and its membranes appreciable after death. Delirium and somnolence are found to have occurred just as frequently, and to have been as strongly marked, in patients whose brains presented no changes, or exceedingly slight ones, after death, as in those of an opposite character." The most common departure from a healthy condition of the brain consists in some effusion between the arachnoid and pia mater, and this only in moderate quantity; some little vascularity of the cortical portion of the brain, and occasionally an increase of the number of red points on slicing the medullary portion. None of these lesions, as slight as they are, were found by Louis in more than one half of his cases; and in fifteen out of eighteen cases examined by Chomel, there were no appreciable changes.

Failing to find in the brain or its membranes any pathological changes to account for those grave symptoms during life, we must look to other organs and interrogate their disorders, to ascertain the cause of symptoms so constant, and of so much gravity in typhoid fever. It is with much diffidence that I offer a theory by which to account for them. In doing

so, I am influenced by no other motive than the desire that those members of the profession whose opportunities enable them to investigate the lesions of this disease, will direct their researches to the investigation of the phenomena I shall mention, both with the microscope and test-tube. The great similarity in the symptoms presented by persons laboring under depraved or suppressed bile, and the head symptoms in typhoid fever; and the correspondence of the anatomical lesions, both of the brain and liver, in the two conditions, lead me to the belief that the analogous symptoms proceed from the same cause in each instance, viz. perverted action of the functions of the liver; and very probably to the evolution of some material by the secreting cells of the lobular substance of the liver which exercises a poisonous action on the brain.

It is a well known fact, that in dysentery, attended with ulceration of the bowels, the liver is always more or less deeply implicated, sometimes to the extent of the formation of abscesses, and is always more or less inflamed. A constant and pathognomonic lesion in typhoid fever, is ulceration of Peyer's glands; and the fact that the portal blood, from which the secretion of the liver is formed, comes directly from the ulcerated bowels and diseased mesenteric glands, and is probably poisoned by the "typhous material," suggest a strong probability that the secretion of the liver would be depraved, and, perhaps, arrested. That this is the case, facts which I shall adduce will, I think, prove.

Bartlett says, that the only alteration of the liver in typhoid fever of considerable frequency, is *softening*. Louis says, that in one half of the cases he examined, the same condition was found; that in some, the liver was lighter in color than natural—that it was sometimes, though less frequently, darker or reddish in color. Wood says the liver is frequently softened.

Now the firmness of the liver depends on the amount of blood contained in the capillaries, the proportion of fibrine in the blood, and, in some degree, on the condition of the secreting cells—an undue quantity of fat in them, tending to render the liver softer than natural. The color of the liver

depends on the quantity of blood, the quantity of fat, and of biliary coloring matter. Every human liver contains uncombined oil in the hepatic cells in the proportion of three or four per cent. of the whole mass. When the liver contains blood deficient in fibrine, with an undue amount of fat in the cells, it is softer than natural, and, for the same reasons, lighter in color, especially then the biliary coloring matter is in less than the usual quantity. When the normal amount of fat is exceeded, the secreting cells are destroyed by it, in proportion to its excess, and deficient or depraved secretion is the result.

The researches of Louis have shewn, that the bile in the gall bladder of persons dead of typhoid fever is, in more than one half of the cases, thinner and more watery than healthy bile, and that it often has a reddish or rust color. These observations have been confirmed by Gorup-Besanez, who, upon analyzing the cystic bile of persons dead of typhoid fever, found that in no single instance did it contain more than one half of the usual quantity of solid matter. This result is not invalidated by the fact, that the bile undergoes concentration when retained in the gall-bladder, for it is not probable that the proportion of solid matter would be decreased by concentration, but the reverse; for if long retained before death, the water would be absorbed, and the bile rendered more viscid and thick.

An inflamed, thickened, and sometimes ulcerated condition of the mucous membrane of the gall-bladder is of not uncommon occurrence in typhoid fever. Louis gives three cases in which he found this condition. In one of them, the mucous membrane was thickened, and contained a purulent fluid, mixed with unhealthy bile. In the other cases, the lining membrane was reddened, and contained unhealthy bile. This condition of the gall-bladder was revealed by no symptom during life. Budd mentions a case of ulceration of the mucous membrane of the gall-bladder in the course of typhoid fever, which was revealed by symptoms during life. There were gall-stones in this case, one of which blocked up the cystic duct, and caused so great an accumulation of puriform

matter that the gall-bladder could be felt below the ribs. Bartlett says the gall-bladder is sometimes manifestly inflamed and contains pus; sometimes reddish or greenish bile in considerable quantity. Sometimes it is darker, less liquid and viscid, and in very small quantity. This condition of the gall-bladder mentioned by so many writers, is caused, I apprehend, by the contact of the vitiated, irritating secretion of the liver.

These results of the investigations of the most learned and reliable writers on typhoid fever, show conclusively, to my mind, that the liver, notwithstanding the fact that its disorders are overlooked by writers, is deeply implicated in the pathology of this disease.

Having thus mentioned the most common and characteristic lesions of the liver in typhoid fever, I propose to describe those of the same viscus in cases of death from suppressed or defective secretion of bile.

In nine fatal cases recorded by Dr. Budd, the general condition of the liver was as follows: In all of them it was either softened (which was the condition in a majority of cases) or flaccid and flexible. It was lighter in color than natural and smaller in bulk in every case. The gall-bladder was contracted, and contained, in one case, a greenish, viscous semi-fluid mass, and in all of the other cases, altered bile, in greater or less quantity. The gall-ducts were pervious throughout, in all of the cases. In all of the cases of this disease recorded by Budd, some of which recovered, after presenting very grave symptoms, the head symptoms were very prominent. In two of the fatal cases, there was active delirium *followed by coma*; and in all of the others, comatose symptoms were present from the beginning, or from the time they first came under notice until death, varying in intensity from drowsiness to complete insensibility.

The brain presented the following appearances: In a majority of the cases, the bloody points, on slicing the brain, were more numerous than natural; in one case, there was congestion of the choroid plexus, and in one the surface of the brain

was loaded with blood. In some of the cases, there was an effusion of yellow serum under the arachnoid; in others, very slight effusion in the ventricles, and, in some, less serum than natural, the brain being preternaturally dry. In some, there were no morbid appearances of the brain whatever, and, in those cases, the head symptoms were equally as intense as in those where changes were found. In none of the cases was the consistence of the brain altered.

The great similarity of the head symptoms in this disease, and typhoid fever, and the analogy of the anatomical lesions induce, with me, the belief that the symptoms proceed from the same cause in each. It is apparent that the liver, from its connection with the diseased bowels in typhoid fever, is peculiarly exposed to the morbid influences arising from them. The results of the investigations given above, prove that these influences have the effect of impairing its nutrition, and deranging its functions. The researches of Gorup-Besanez especially prove this. And there are, very probably, other important changes which have thus escaped detection. As in cases of fatal jaundice, it is probable that some noxious material is evolved by the secreting cells of the liver, which produces the peculiar effect on the brain, manifested by the head symptoms during life.

That this arrest or depravity of secretion is not manifested by the appearance of jaundice, is not singular. The fact is well established, that the coloring matter of the bile is *formed* by the liver, that it does not exist as such in the blood, and is merely separated from it by the liver. We know, also, that in some diseases of the liver, when there is an almost complete arrest of secretion, there is no jaundice, and, sometimes, no tinge of bile in the liver. This is the case in scrofulous enlargement of the liver. The absence of jaundice may be owing to "a diminution in the amount of changes which the blood undergoes in the liver, which diminution lessens the amount of biliary coloring matter to be thrown off."

That no local symptoms reveal the morbid condition of the liver in typhoid fever is not strange, for the general disorder

of the system completely overshadows them. As in fatal cases from suppressed or depraved secretion of bile, the local symptoms are not observed in the midst of the general disorder.

I submit this theory to the profession, with the hope that it may lead to investigation of the lesions of the liver in this disease, for by that test alone can its truth or falsity be proved. "Medicine is enriched only by facts."

ART. III.—*On the Principal Diseases of the Nervous System.*

By EDWARD H. WHITE, M. D., Baltimore.

WE will here, for a time, vary the consideration of the subject we are endeavoring to contemplate, and allude to a form of paralysis in which the lesion is external to the cranium, involving the trunk, or branches, of a nerve at a point more or less distant from the centre in which it is implanted. This plan is the more applicable, because it will serve to bring into contrast different forms of the affection, in which the prognosis as well as the indications of treatment are essentially different; and in which, therefore, a discriminating diagnosis is essential, alike, to the welfare of the patient, and the reputation of the medical attendant.

I refer to that form of the affection known as facial paralysis, in which the superficial muscles of the face lose the power of motion as well as of expression; inducing an amount of distortion and disfigurement that claims the immediate observation of friends, and excites serious apprehension and solicitude for the welfare of the patient, since they are symptoms that usually forebode serious organic injury, and indicate the beginning of a general failure in health, whose march, even if slow, is yet unquestionably certain.

But, fortunately for the patient, the superficial muscles of the face—all those muscles whose chief office consists in giving expression to the countenance and symmetry to the fea-

tures—derive their nervous supply from the portio-dura, the facial portion, of the seventh pair of nerves, which, experience teaches, is rarely ever involved in that form of face-paralysis, which depends on disease of the brain, and which is due to the direct implication of the fifth and third pairs of nerves,—these being distributed to the deeper-seated muscles, especially to those concerned in mastication.

This being the nature of the case, depending on paralyzing injury to the portio-dura, we are prepared to find that, in all the superficial facial muscles, there is an exaggerated action and movement on the sound side. The equilibrium and counter-balancing action of the muscles of the opposite side, so essential to symmetry of expression, being destroyed by the withdrawal of the antagonising influence of the palsied ones, we have a one-sided distortion of the countenance—especially exaggerated in every movement of the muscles—as in speaking, laughing, smiling, &c.

But the sign most characteristic of the local nature of the lesion, and serving most readily to distinguish it from paralysis of the deeper-seated muscles through lesion of the brain, involving the fifth pair of nerves, is the staring eye of the patient. The power of motion in the orbicular muscle of the eye-lid being lost, the patient is unable to close the lids of the affected side; a most disagreeable circumstance, since it subjects the patient to conjunctival irritation, and, perhaps, inflammation, from too much exposure of its ocular surface to the irritating action of light, air and foreign substances.

Nor can a patient with portio-dura-paralysis frown on the side affected, since there is loss of power of the corrugator supercilii; nor can he move the scalp of the same side, since there is loss of power in the frontal portion of the occipito-frontalis muscle; nor can he move the nostril, or control the angle of the mouth, on the side implicated, because there is paralysis of the levatores alæ nasi, and zygomatic muscle: nor can the patient whistle, this requiring the pursing up of the muscles of the mouth, which cannot be done, for one-half of the orbicularis oris muscle is also paralyzed.

But, in addition to these sources of distortion and inconvenience, from a paralytic state of the muscles entirely supplied by the facial portion of the seventh pair of nerves, there are superadded the aggravating consequences of palsy of the buccinator muscle, which not only receives a branch from the portio dura—its nerve of expression—but also a more considerable motor branch from the fifth pair—making it not only an accompaniment of simple facial paralysis, but also a concomitant of the graver form, hemiplegia, in which there is lesion of the brain. So, by reason of its loss of power, the cheek hangs loose and flaccid, flapping to and fro in the act of speaking—thereby interfering seriously with the important office of articulation, as well as with that of mastication—allowing the food to accumulate between the teeth and the jaw: these inconveniences the patient learns to remedy, in some measure, by supporting the cheek with the hand, both in articulation and mastication. The hanging and wasting of the cheek, if not repaired by the ordinary improvement of the case, deepens with its duration—and becomes therein, to some extent, a feature of unfavorable omen as to the ultimate recovery of the paralytic muscles.

Now, in regard to the nature of this affection, which it is so important we should appreciate, lest it be confounded with other forms of paralysis, in which not only the prognosis, but the indications of treatment are so essentially different, the profession were in ignorance, until Sir Charles Bell, whose genius unraveled the mystery of the nerves of the face, taught us it was strictly a local paralysis, due alone, with the exception of the buccal branch of the fifth, just named, to a lesion in some part of the course of the portio dura of the seventh pair. The muscles of mastication being free, and the sensibility of the face being undisturbed, we have sufficient evidence of exemption of the fifth pair of nerves, with its corresponding absence of lesion of the brain. If, as occasionally may happen, there should be inconsiderable pain and numbness, now and then, in the palsied side of the face, it would indicate but a slight affection of some of the filaments of the

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fifth; and by no means disturb our confidence in a favorable opinion as to the safety of our patient.

So, in regard to the causes ordinarily engaged in its production, is there similar evidence of local application and influence. Otitis, for instance, with discharge from the ear, as in scrofulous children, and subsequent extension of the disease to the petrous portion of the temporal bone, is a frequent source of its origin. And, here, as will readily be seen, its origin is of a character to give the least possible promise of restoration to the paralytic muscles; since the paralyzing lesion consists in destructive inflammation of the nerve-trunk in the Fallopian aqueduct prior to its point of distribution to the face.

Injury of the trunk of the nerve, in accidental wounds—surgical operations about the face and parotid region, involving the trunk or its branches, or the more direct operation of its division in obstinate facial neuralgia, formerly resorted to by surgeons as a means of cure, they being ignorant of the distribution and functions of the nerve—are local sources of its production; and, unfortunately, when so produced, can scarcely admit of the expectation of recovery. But of all the exciting causes of the affection, cold is the most frequently operative source. The direct impression of cold air, for a continuous period, upon one side of the face, may induce it—as when an individual is exposed, on a cold winter's day, by a seat on the driver's box, or to a current of cold air from the open window of a carriage or railroad car, or in a state of fatigue and relaxation is exposed to a current of air from the open door or window of his dwelling. In each of these instances the morbid impression is made directly on the peripheral ramifications of the nerve, inducing such impairment of their nutrition as to destroy their power of motor influence over the muscles to which they are distributed.

Cold may also induce it by its general influence on the system; as when an individual is exposed to the chilling effect of standing too long on the damp earth, or is exposed too long or too suddenly to a damp or chilling atmosphere, when sensitive from long confinement in a room, or from the exhausting effect of previous disease.

Again, it occasionally arises under conditions and circumstances which afford no other clue to its origin, than the probability of its dependence on malarious, or blood poison, or some constitutional vice. Their particular local effect on the facial motor nerves being the result of developing conditions, or of special affinities, entirely unknown to us; but not less appreciated, than when, by similar affinities for the sentient nerves, the same poisons are active in determining neuralgia in special localities. Rheumatism is also a source of its production, especially when, superadded to the general rheumatic diathesis, there follows otitis with surrounding inflammation and its subsequent consequences.

Although of rare occurrence, it would be censurable to omit mentioning the fact, that a paralyzing impairment of the portio dura may occur simultaneously on either side, inducing double facial paralysis; or paralysis of the muscles of one side may be succeeded by that of the opposite half.

Now, in regard to the prognosis, there is always one element of consolation in these cases, which will enable the physician to allay the fears of patient and friends: that, in itself, it is not indicative of disease which compromises the safety of the patient. But in regard to recovery from the local paralysis, our judgment must have reference to the nature of the exciting cause, as well as to the general constitutional state of the organism.

Where the lesion of the nerve is the result of destructive disease in its trunk, as in caries of the petrous portion of the temporal bone, nothing in the way of restoration can be hoped for. Nor in those cases in which the lesion is the result of division of the trunk, from accident or otherwise, can much be expected in the way of perfect muscular recovery; since regeneration of nerve structure is slow and uncertain; and when attained, is rarely so perfect as to admit of uninterrupted propagation of nerve power. So of those cases which admit of direct medical interposition, with a view to their cure, our judgment of the indications to be met must be based exclusively on the nature of the paralyzing cause. Where otitis is

the source of mischief, leeches, antimony, mercurials, and such agents as the reduction of inflammatory action may demand, would suggest themselves as appropriate measures of treatment.

When a particular constitutional diathesis, or vice, affords the only probable ground of solution as to the nature of the paralytic affection, then our remedies should look to a gradual modification of the former, and to the effectual eradication of the latter. Syphilis, gout, rheumatism, malarious poisoning, each offer their particular indications of treatment. When exhaustion or organic debility, or an anemic state of system, is present, then such agents as will impart constitutional tone, and restore the attenuated blood, will meet the therapeutic indications: pure air, generous diet, with vegetable and mineral tonics, as the one or the other, or both, may be adapted to the assimilative capacities of the patient.

In those cases in which the impaired nutrition of the nervous branches is the direct result of cold air morbidly impressing their peripheral extremities, time, with such dietetic influence as the circumstances of the case may suggest, will generally prove adequate to their restoration. A period varying from two to eight or ten weeks—say an average of four or five—may be regarded as a fair limit within which to expect a return of power in the paralytic muscles and nerves.

Did our present design permit, we might dwell upon other forms of local paralysis originating in injury to a nervous trunk, or to its ramifications. The effect of a fall or blow, received directly upon the deltoid or other muscles, in producing such form of paralysis, is a fact familiar to professional observation.

But, in accordance with our design, with a view to comparison, having here considered the lesion of nerves external to the cranium, we will again return to the graver forms of paralysis, in which the lesion directly involves the brain-structure itself.

Softening of the brain, by far the most frequent source of paralysis, will now engage our attention. The characters of its different processes, and the symptoms pertaining to their

respective forms, we shall imperfectly elucidate in our subsequent pages. In our present state of knowledge the accompanying phenomena, connected with the antecedent history, will, in a majority of cases, enable us to determine with sufficient accuracy the nature of the paralyzing disease; but, unfortunately, the same accuracy cannot be attained in determining the exact locality of the lesion. The complicative sympathies and connections subsisting between the different portions of the encephalon, in the existing state of pathological acquirement, offer an almost insuperable barrier to the attainment of positive certainty in determining the exact *site* of morbid action. As far as we now know, a clot in one hemisphere of the brain, encroaching more or less upon the corpus striatum, will excite symptoms exactly the same as a similar clot, deep-seated in the hemisphere of the cerebellum, because of similar connections of the deeper structures of the latter with the centre of volition.

Now, in regard to the heart, from a more extended comparison of the symptoms during life with the morbid appearances after death, we have no difficulty in estimating the exact site of lesion, though we may fall far short of a similar appreciation of its nature. And it is, altogether, a reasonable calculation, that like certainty may be reached in localising the different diseases of the brain, when investigation shall have gone further, and the phenomena during life, in a sufficient number of instances, shall have been carefully collated and contrasted with the appearances revealed by post-mortem inspection.

But we will proceed with the illustration of our subject. A patient, after some days of ill-defined complaint, in the form of numbness in the extremities subsequently affected, or in irregular neuralgic pains of occasional occurrence, is suddenly stricken with paralysis of one side of his body and face. There may be loss of voluntary motion in the paralyzed muscles, unattended with disturbance of sensibility in the parts affected, or, if present, of short duration, and such as would pertain to the shock of a sudden seizure, although of no material

importance as a complicating accompaniment of the case. And it may be well here to state, that, in a large majority of cases, the impairment of sensation in the affected parts is not a necessary attendant. The corpus striatum, the centre of volition, being far more frequently the seat of morbid action, than the optic thalamus—supposed by physiologists to bear the same relation, as the centre of sensation, to its function, that the former bears to voluntary motion; or, if involved directly in disease, or indirectly, from injury to the surrounding portions, owing to its far more extended connections with the various parts of the encephalon, it much more readily recovers from the damaging effect of lesion; or, by reason of its more extended relations and sympathies, it may require disease of far greater extent to induce an equal amount of sensational disturbance. Be this as it may, however, the power of voluntary motion far more readily responds to a paralyzing lesion in the corpus striatum, whether from disease directly involving the structure of this centre, or from its participancy in that of the optic thalamus or other surrounding portions—than does the function of sensation to corresponding lesions in the optic thalamus and its surrounding structures. But in addition to the paralysis of motion, the consciousness of the patient may be also disturbed—varying in extent from that of lethargy to a coma more or less complete, according to the extent of compressing clot; the effusion into the surrounding healthy structures being essential to the apoplectic coma, or to the accompanying disturbance of consciousness. But the paralysis of motion may be complete without the accompanying disturbance of consciousness; the palsied muscles being relaxed, and exhibiting no resistance to the movements that ordinarily excite their reflex action, as tickling the sole of the foot, bending the forearm upon the arm, or subjecting them to the action of the galvanic current.

In the progress of such a case, after the lapse of some weeks, evidence of improvement is exhibited—first, if there be impairment of consciousness, in a gradual restoration of that function, if the case be one in which this symptom is present,

corresponding with the disintegration and absorption of the compressing clot—next, in a slow improvement in the paralyzed muscle; first in the lower extremity, then in the muscles of the face and tongue, and next in the arm and hand, so that the fingers may be now slightly flexed upon the hand, and the forearm upon the arm.

The facial phenomena and hanging of the cheek from paralysis of the buccinator muscle, due to impairment of the buccal branch of the fifth pair, a characteristic feature in this form of disease, it may not be amiss, in this connection, to state, present a striking contrast in expression to that form of facial palsy which we have already had occasion to consider; for not only is the cerebral form of disease associated with more or less of palsy of the tongue, shown in the difficulty of articulation, and in its deviation from the affected side of the body, but it is altogether exempt from the peculiar features which pertain to the portio dura paralysis, since here the movements of the superficial muscles remain undisturbed, the patient being able to drink, frown and whistle, and to laugh, without the extent of distortion which is produced when the portio dura nerve is the seat of lesion.

And here, in the way of diagnosis, it would be fair to conclude, from so sudden a paralytic seizure, that the brain structure had all at once become unfitted for its ordinary functions; that the implicated fibres had ceased to propagate their wonted influence to the muscles of voluntary motion; and inasmuch as the withdrawal of the power of volition is so prominent a feature of the case, that the corpus striatum, the centre of that function, or its immediately adjacent parts, must be the principal seat of lesion. The case being unattended with any considerable disturbance of sensibility, the optic thalamus, the portion most intimately connected with the volitional centre, cannot be looked to as being extensively engaged in structural injury, since both reason and observation teach that sensation is impaired in proportion to the extent of disease in this centre; that if the disturbance of sensation were considerable, or of much duration, from the well-known

power of this portion to resist and recover from the consequences of injury, we would necessarily apprehend the existence therein of extensive structural lesion.

In thus attempting to define the optic thalamus, as the centre of sensation, which Dr. Todd thinks his observation justifies him in asserting, (to be established alone by future inquiry and experience,) it is by no means intended to confine its influence to the office of sensibility; for daily observation in pathological inquiry confirms the fact, that this centre is so intimately blended with the corpus striatum, as that the latter participates in lesion of the former; and that paralysis of volition may indirectly ensue from any considerable injury to the optic thalamus, as well as that it follows structural lesion in other segments adjoining the centre of voluntary action.

The suddenness of the seizure, as just remarked, would indicate that the brain lesion, of whatever extent and duration, had not till then reached the point of a paralyzing effect. Now, it is clearly established that a process of white softening, the diseased cerebral vessels no longer affording the nutrient supply of blood, may go on for a long period—the brain fibres still, with considerable efficiency, propagating their influence—till suddenly the process of disease attains a point at which solution in the continuity of the fibres takes place. This sudden solution or rupture in the nerve fibres, if not accompanied by the effusion of blood, is followed by paralysis in its uncomplicated form, a paralysis more or less complete, of greater or less extent, according to the amount of substance involved in the destruction of tissue. But with this form of simple paralysis, dependent upon solution of the cerebral brain structure, there follows, in the majority of instances, impairment of consciousness, consequent undoubtedly upon accompanying apoplectic effusion into the softened tissue; and its encroachment to a greater or less degree upon the surrounding healthy texture. The arteries leading to the affected portion being diseased, and ceasing in their healthy maintenance of the surrounding brain substance, are left without adequate

support therefrom; and under the effect of some exciting physical or moral cause, yield to the force of their contents, and the blood is effused into the surrounding healthy substance, inducing coma in exact proportion to the amount effused and the degree of pressure exerted by the clot.

Modern pathology has not, in any department of our profession, been followed by more beneficial practical results, than in the recognition of the essential fact, that, in a great majority of instances, the apoplectic effusion is dependent upon a degenerated state of the cerebral vessels, and consequent atrophy of the surrounding brain structure, the supply of blood being inadequate to the maintenance of its texture.

Integrity of brain substance is essentially dependent upon its normal supply of blood. In certain impoverished conditions of blood and system, associated, primarily, with some fault in the digestive and assimilative processes, or with some vice of system pertaining to more advanced life, the vascular walls become the seat of fatty and earthy deposits into their tunics, undergoing the form of atrophy and degeneration known as atheroma. Not only are the larger cerebral vessels liable to such deposits and degeneration of their coats, but the capillaries, as pointed out by Dr. Paget, are especially subjected to the fatty transformation of their muscular structure: so that the portion of brain to which these vessels are distributed no longer receives the amount of material essential to its proper nutrition; the normal circulation of blood in a part requiring the integrity of its vascular walls. By reason, then, of this interrupted supply of blood, the surrounding portion of brain is impoverished—undergoes a process of waste and softening till it reaches the extent of solution of its fibres—paralysis from white softening ensues, attended with a flaccid and relaxed state of the paralyzed muscles, with more or less diminution of their bulk, their natural temperature, and of their vigor of circulation, and with want of ordinary sensibility to the action of galvanism. In such form of disease, the melting down of cerebral nerve fibres, not yet involving the rupture of a vessel, and, therefore, unattended with coma or disturbance

of consciousness, the probabilities are that the patient would exhibit but little disturbance of intellect, the hemispherical convolutions having mostly escaped the damaging result of the paralyzing lesion.

Now, such form of atrophic softening, with its corresponding paralysis, as the result of deficient or interrupted supply of blood, finds confirmation, not only in the evidence afforded by daily post-mortem examinations, but is equally proved by the effect of cutting off the supply of blood from a portion of brain during life. In placing a ligature around the common carotid artery for surgical purposes, hemiplegia, without loss of consciousness, it is well known, has speedily followed upon the opposite side of the body—post-mortem inspection revealing a state of atrophic softening of the cerebral hemisphere on the same side as that of the carotid tied. A similar result follows the obliteration of the carotid, from particular forms of aneurism, or other disease; the lodgment of a plug of fibrine in one of the cerebral arteries, thereby arresting the flow of blood to a given segment of brain tissue, is followed by like result; and so may a tumor in the brain structure, compressing a vessel and interrupting its circulation, be followed by an atrophic paralyzing lesion.

Now, it is clearly established that this process of white softening, from imperfect nourishment of the brain, may exist alone, or in its uncomplicated form; but it is often, indeed, almost universally the precursor of apoplectic effusion.

But paralysis may also be the result of an entirely different process: inflammation of the brain-substance may induce softening, which may or not be attended with rupture of fibres. This form of lesion is known as red or inflammatory softening; and should paralysis not follow for the want of solution of texture, it may yet occur as the consequence of inflammatory deposit, compressing the healthy nerve structure, and interrupting the conducting power of its fibres. But here the paralysis would ensue more gradually than in the former variety; and would be preceded for a much longer period by a train of morbid phenomena—as headache, drowsiness, and

more or less of coma—and though sympathetic extension of injury, in all probability, with disturbance of sensation. But here, too, the paralytic muscles would exhibit a greater or less degree of resistance in the effort at exciting their reflex actions, whether by the stimulus of galvanism, the bending of the leg on the thigh, or flexing the forearm upon the arm; for the lesion being irritative in its nature, would exhibit far greater irritability to all disturbing causes, than would obtain with the atrophic or non-inflammatory lesion, which is depressing in its character; and is attended with a flaccid and non-resistive state of the paralytic muscles. It is true, in a matter so vitally important as a just discrimination of the different states of the brain, as indicated by the respective conditions of the paralysed muscles, we should not be forgetful of the fact, that with an atrophic lesion, there may exist a resistive state of the muscles; from accompanying rupture of a vessel, a small apoplectic clot may find its way into the adjacent healthy structure, lacerating its substance, and thereby acting the part of a local irritant to the surrounding texture; so that the affected muscles would exhibit moderate resistance to the action of the usual tests.

The form of paralysis, however, of the inflammatory type, which contrasts most strikingly with that of the atrophic paralyzing lesion, is that which pertains to the disease of the membranes, or superficial portions of the brain, as heretofore pointed out; or that in which there is a growth from the skull, or a tumor in the hemispheres, acting as a constant irritant to the surrounding healthy structure; and producing respectively paralyzing lesions essentially irritative in their nature. Here the muscles exhibit simultaneously with the paralysis, or soon after its appearance, or even in anticipation of the paralytic result, a spastic and exceedingly sensitive condition; not only offering resistance, and exhibiting morbid sensibility to the action of stimuli, but assuming in some cases a state of rigidity yielding only to an amelioration in the exciting cause.

But forms and cases of paralytic softening, with which we have been chiefly occupied, bear, in all the history of their

antecedent and accompanying phenomena, the evidence of an opposite pathological condition. A condition in which the processes of restoration must depend, in a great measure, upon the reparative efforts of nature. In those cases in which consciousness has been involved, the gradual disintegration and absorption of the compressing clot must afford the measure of their improvement. The subsequent paralysis to be gradually recovered from, through the medium of a collateral capillary circulation—slowly repairing the degenerated structure—if the diseased state of the cerebral vessels be not too far advanced and too generally extended to render such restoration, with subsequent maintenance, a possible result; or, if the constitutional depravity be not such as to render a reparative nutrition an impracticable end.

And here, certainly, in the way of treatment—where there is manifestly imperfect nourishment of tissue—where the results cannot by any possibility be due to an over supply or excess of blood, and where the vital powers are below the normal standard, we cannot resort to measures that would oppose the restorative processes of the organism, and thereby lower those vital and nutrient capacities, through which alone recovery is possible. Our patient should be placed in the horizontal posture, his head kept cool, the bowels evacuated by an active enema of castor oil and turpentine, or by the administration of a dose of calomel and aloes, as the one or the other may best meet the indications of the disease: these measures, however, should be used in a manner to involve the least possible effort, or expenditure of power, on the part of the patient. A general supporting plan, with pure air, and nourishing diet, would fulfill the indications in the subsequent progress of the case.

Unfortunately, however, in many instances the capillary degeneration and constitutional impairment are such as to preclude the capacity of recovery, and the patient progresses from bad to worse, with increased wasting and flaccidity of the muscles of the paralyzed limbs. But by a supporting plan judiciously adapted to the powers of digestion, the patient may be sustained for months or years.

Where the softening and paralysis are unquestionably due to inflammatory action, as occasionally happens, then an appropriate selection and application of means calculated to subdue the inflammation, and remove its results, would meet the indications of treatment. To promote absorption of effused blood or lymph, and to lessen the irritating effect of their presence upon the adjacent surfaces, iodide of potassium, and mercury, with a view to its specific action, should be judiciously resorted to.

(To be continued.)

ART. IV.—*The Treatment of Diphtheria.* By J. DU VAL, M. D., near Petersburg, Va.

IN offering a few remarks on this alarming disease, which seems to have aroused medical inquiry, both in Europe and America, my design is rather to present my method of treating it, than to enter into a discussion whether it is a modification of scarlatina, of croup, or a disease essentially different from both. These questions are now under elaborate discussion in schools, societies and journals, and may, sooner or later, elicit useful conclusions. I shall simply take my position pending the controversy, contribute my mite to suffering humanity, and yield my errors to a more successful treatment when made known.

My opinion, then, of this disease is, that it is a *modification of scarlatina of the throat*—the old disease which has borne away multitudes of infants from Richmond especially, as well as all other cities, and many portions of our country during the last forty or fifty years, and is now doing its work of destruction daily. And why should it be deemed unreasonable to consider diphtheria, as it is called, nothing more nor less than scarlatina? Scarlatina is prevailing in every direction, almost, over our

country, as admitted, while here and there we find diphtheria, hand in hand with it; and so much like it, that the most skillful observers are unable to trace such diagnostics as can be safely relied on for practical purposes. But it may be alleged that this new disease is more fatal frequently in its effects than scarlatina is generally, and seems to be produced by an element in the blood—a “firment,” that speedily breaks down all the organic functions, and leads to death. But I reply, that more than twenty years ago, I witnessed far greater ravages of scarlatina, than I have heard of by diphtheria. On one farm, it was computed that the owner lost of servants, in the course of the period of forty-eight hours, four thousand dollars’ worth. When I arrived, several of the dead were unburied for the want of help, and fifteen were then laboring under the disease in a most aggravated form. I felt cause of rejoicing that none of these died, nor any others. And further, I would remark, that if medical men would be more careful in committing themselves to *system*, by which they become manacled and helpless, and often mischievous in their influence on others, and “look well before they leap,” we should hear less about such ideas as a “*firment*” in the blood. Any disease that impairs the healthy action of the lungs, whether operating directly or sympathetically, will soon tell most injuriously on the blood. The proper functions of the lungs must be maintained, or the blood will deteriorate, and with this deterioration every other organ will be made to suffer more or less in its peculiar functions. Instead of the “firment of the blood” causing diphtheria, I should argue that diphtheria, or scarlatina, are ever likely to disturb the lungs, and thus disorder the blood, and so the system at large.

But another reason why it should not be incredible that these forms of disease may be a modified unit, is found in the fact, that within the observation of all experienced physicians, many diseases have undergone various mutations and modifications. It is so in reference to the bilious fever of the tide-water region. Forty years ago, that disease, as regularly almost as any of its periodic chills, commenced its work in

May and June; but for the last twenty years, no such course has been observed. The disease recurs irregularly, and is as irregularly marked and mixed up with other modifications of fever. And so we see as to chills—the congestive and other forms. But who would deem a congestive chill another disease—no matter how much worse than the common form? And again of the Varioloid disease as connected with regular Variola. The wisdom of man will never be able to make a diagnostic system, that will prevent these two forms of small pox from producing each other *according to circumstances*. So much in justification of my position.

Of the treatment.—Called in the early or first stage of attack, before indications of sinking appear; finding the tonsils, palate and surrounding parts inflamed, or perhaps already ulcerated; with more or less fever, and frequently very red cheeks and suffused eyes; furred tongue, with generally naked, red edges, and much difficulty in swallowing; I proceed as follows, both with children and adults:

A concentrated tincture of ipecac (prepared by putting one ounce and a half of ipecac to one pint of strong spirit, which I would advise to be always kept in families) and spts. nitrous ether are mixed in equal quantities, and given according to age, in broken doses, every twelve or fifteen minutes, until the patient vomits freely. Promote the vomiting by frequent drinks of warm water. A child eight to ten years old will generally take four tea-spoonfuls of the compound at a time. Three or four doses are generally sufficient to vomit, and afterwards produce a free perspiration. Should the skin remain dry after vomiting, a warm stimulating bath to the feet and legs will be good. This may be repeated every evening. Unless the case becomes obstinate, it will not be necessary to repeat the emetic; but it may be called for again in a day or two, particularly when the fever is high and the cheeks flushed. But the same mixture is to be given every evening, in tea-spoon doses, at intervals of an hour or more, for controlling the fever and determining to the surface. In this compound you have my emetic and fever medicine in one preparation.

I will introduce the *external* application here; I think it unsafe to omit it. Blistering is highly objectionable. If there be much general prostration, it will tend to sloughing of their surface, and add to the evils of the case; but if they escape this objection, you are thrown out of the use of better counter-irritants, by the occupancy of an old blistered surface—a sore throat must be attended to as such. For the same reason, mustard or anything else that will break the skin, must not be used. We ought to maintain full control over the surface of the throat from ear to ear, without breaking the skin. The poultice generally used by me, is prepared by making a simple mush—corn-meal mush, strongly mixed with Cayenne (powdered, or any sort of red pepper chopped well) and common salt. Let it be strong in reference to both articles. Should the inflammation be very active within the throat, and the neck swollen, then add to the foregoing articles a pretty good supply of smoking tobacco. The tobacco seems to quiet and give ease, as well as reduce faster the swelling. The poultice being thus prepared, a little olive oil or lard may be added. But before applying, a dressing of common volatile liniment is highly suitable. The poultice is to be renewed night and morning, and the neck kept constantly well covered.

The gargles to be used.—I seldom use more than two washes or gargles. I have found them adequate to the ends aimed at. I think it better to write them out in plain terms, for the sake of families, and the public at large, should they ever fall under notice, than in merely medical style.

1. For this gargle, take a hand-full of the roots (cut up into small bits) of the common sumac (shoemake), berry-bearing or not, and a pod or two of red-pepper. Boil these strongly in a pint of water down to three gills. Strain off, and add to this decoction, one drachm of sugar of lead, and a gill of honey. Mix well, and this wash is ready.

2. Take, the liquid chloride of soda (Labarraque's preparation), two ounces; concentrated tincture of myrrh, one ounce, and a concentrated tincture of capsicum (red pepper), half an ounce. To these, add two ounces of honey.

With these two gargles, alternately used every hour or so, I have found no occasion for the use of caustic. I object to caustic as a remedy, but much more to the harsh treatment by the *mop*, to which it leads. I am not at all surprised to hear of the ravages of diphtheria, nor of the deep and awful holes with which it penetrates the field of its depredations. With a good strong-handled mop, to be scoured out and re-applied twice a day, is rather more than the tender tissues of either larynx or pharynx can bear. My opinion is, that the mop should never be used with caustic nor any thing else, as long as the patient can gargle. If the patient be too weak, or too young, then the mop must be used, but most tenderly. Nothing can be more unfortunate than the practice of scraping and scrubbing off the natural and proper covering of those tender parts which nature thus covers, in order to shield, and thus bring about the healing process underneath. What should we think of the physicians who happened to have charge of an ulcer on one leg, who would, on every visit, not only strip off the dressings, but the newly formed scab, too? The object of mopping should be to gently apply the remedies to the ulcerated surfaces by frequently wetting their coverings. Medical men have been long warning mothers against the cruel folly of excoriating the mouths of their babes affected with thrash, yet many of them are treating sore throats in the same way. Use the mop when the patient cannot gargle, but not for the purpose of cleaning out the filth so much, as for the purpose of healing the disease. There cannot be a filthy ulcer to which the second wash is applied every two hours. It is calculated to counteract the disagreeable odor which this disease throws out in its low forms.

General treatment.—The next morning after the emetic, as before directed, open the bowels by a moderate dose of Rochelle or Epsom salts, in weak pepper tea, well sweetened with sugar. Castor oil may be substituted with small children. But very small quantities of cathartic medicines can be borne; nor do they seem to be required but in a small way. Every two or three days, a few evacuations will be enough. After

the active symptoms have given way, in order to meet the remaining debility, quinine in moderate doses, suspended in common syrup, should be given two or three times in each forenoon. An occasional drink of weak pepper tea, sweetened, may be taken from the beginning. A little cold water, occasionally, is admissible. Cider and water, and wine and water, both may be used to restore strength and appetite. When the appetite has returned, light, nourishing diet, crackers, animal soups, &c., may be enjoyed.

I omitted to say, in directing the emetic, that it should be diluted with warm, sweetened water. This remark is for families, not physicians, of course.

I will now conclude this communication, by giving a brief account of the last case that I have had of this disease. It was a girl twelve years old. She had been attacked some ten days before I saw her. I found her greatly prostrated; with foul tongue; largely tumefied in the fauces, and of a dark leaden color; several ulcers about the tonsils; nostrils loaded with filth; pupils largely dilated; ears in a most painful state; voice gone, making signs to the family by the mere motion of her lips; pulse barely perceptible in the wrist, and very frequent; added to which her extremities were cold, and the skin dry and smooth as death. No physician had seen her, and she had been using a wash of oak-bark tea, and such remedies as the poor are driven to. My opinion was, that she would hardly survive the next twenty-four hours. I commenced by having the poultice (except the tobacco) immediately applied, and, as speedily afterwards as practicable, the second wash described, every two hours, day and night. The next morning, I found a manifest improvement in many of the symptoms, and proceeded to alternate with the other wash, quinine, &c. She improved rapidly; and, in the course of four or five days, I found her sitting eating her breakfast.

The foregoing is a short sketch of the treatment which has, in my hands, been made instrumental in saving many from the ravages of one of our most formidable diseases, and, I trust, will be made useful to many by other hands. No pecuniary

interest moves me in the premises, having retired from the active practice of medicine for several years.

P. S.—It may appear to have been an oversight, not to have noticed the use of calomel in diphtheria. In my early practice, in common with physicians generally, I made free use of it; but long since abandoned it as being, in my judgment, highly detrimental. It seems to me that the whole list of medicines can not furnish another article which would promise as little good, while it would accomplish as much mischief, in this disease, as calomel. Its natural, debilitating effects seem to harmonize most perfectly with the peculiar tendencies of this disease; while no counteracting influence can be secured from its use.

ART. V.—*Aconite in Rheumatism.* By G. W. CLAIBORNE, M. D., Petersburg, Va.

DURING my winter practice, it has been my lot to encounter quite a number of rheumatic patients, and hence I have been induced to place before the profession a remedy which, above all others, I deem most suitable for combatting this disease.

CASE I.—About the 1st of December, I was called to see a young lady, æt. 20; complexion fair, eyes blue, hair dark; who, from exposure to cold, was suffering with sharp, shooting pains through each joint in her body; right knee and ankle were quite swollen and red, tender; pulse 130; face flushed; skin warm; anorexia; tongue white; rheumatism hereditary.

December 4th, A. M.—R. Vin. colchici ʒi., Aquæ fontis ʒvss., Magnesia Henri ʒj.—M. Dose one-half; to be repeated in four hours.

5th, A. M.—Disease not yet abated; knees and ankles both extremely swollen; considerable heat and redness; pulse

120, hard and full; skin dry; secretions torpid; continue the colchicum mixture, and at bed-time give hydrarg. mit. chlo. grs. viij., pulv. Dover. grs. v. Apply aconite warm, on flannel, to the joints.

6th, A. M.—Medicine has operated; pulse 100, soft; secretions aroused; slept some during the night; parts yet swollen, and painful when moved; continue the *aconite* applications, and commence on the following preparation:

R.—Ammoniae phosphatis ʒi., Aquæ fontis ʒvss., Syrup. limonis ʒiij., Tinc. aconitis fol. gtt. xxx.—M. Dose, two table-spoonfuls every four hours.

7th, A. M.—This last preparation has acted finely; ankles and knees much relieved, can move them; complains of pain in each shoulder and wrist, with much tenderness; some pain felt in the hips; pulse 100; skin dry; continue the last solution, with an additional *thirty* drops of tincture aconitis. The following liniment to be used often on the affected joints:

R.—Chloroform ʒiss., Tinc. aconitis ʒiss., Camphora spts. ʒj., Tinc. hyosciami ʒj., Ol. olivæ ʒi.—M. Ft. liniment.

8th, A. M.—Found that the medicine had operated freely; pulse 90, soft; face not so much flushed as on yesterday; moves herself with more ease, though arms and shoulders somewhat stiff; tongue clean, and not so dry as yesterday. Ordered simply tincture of aconite, in ten drops at each dose, every four hours; parts to be rubbed with the liniment. At bed-time, discontinue the aconite, and give hydrarg. mit. chlo. grs. vi., pulv. Doveri grs. iv.

9th, A. M.—Is some better, though did not rest so well during the night; pain in one wrist and hand only; calomel has not operated, and hence ordered olei ricini ʒss.; continue the application of the liniment, and give at bed-time four grains of Dover's powder.

10th.—Is up, and looks well; pulse soft and natural; appetite improved; complains of no pain at all; discontinue treatment, and give nourishment.

CASE II.—Was called to Mr. B. about the 20th of December.

Found him suffering with much pain in his back and limbs; face flushed; tongue foul at the base, at the point naked and glazed; has been afflicted off and on for several years with rheumatism, but never before experienced such general pain; ordered hydrarg. mit. chlo. grs. viij., pulv. Doveri grs. vi.—M. Ft. in pill No. ij.; one now, and the other at 5 P. M. Called about 6 P. M.; found that the medicines had not operated; fever considerable; pulse hard and full, 120; suffering with much pain. Ordered magnesia and colchicum, to commence about 10 o'clock, P. M., with a teaspoonful of the following, when pain is unbearable:

R.—Sulphatis morph. gr. j., aquæ menth. pip. ʒj., Sach. alb. ʒi.—M. Sign anodyne.

December 21st, A. M.—He is somewhat easier than on yesterday, though slept but little during the night. Medicine operated freely; pain considerable in each hip; each knee swollen; face flushed; tongue clean, not so much glazed; pulse more soft, 110. Ordered the following liniment:

R.—Tinc. aconitis ʒiss., Chloroform ʒiss., Tinc. hyosciam. ʒj., Spts. camphoræ ʒj.—M. Sign liniment.

R.—Ammoniæ phosphatis ʒij., Aquæ fontis ʒvss., Syrup. limonis ʒss.—M. Dose, magna cochlea quaque four to hora. The liniment to be applied to the parts most affected.

22d, A. M.—Patient no better; passed an unpleasant night; face still flushed; joints swollen, red and stiff; pulse 110; tongue clean; anorexia; medicine operated three times on yesterday. Ordered the following:

R.—Tinc. aconitis gtt. xxxv., Aquæ fontis ʒij.—M. Dose, two tablespoonfuls every six hours—parts affected to be rubbed with the liniment.

Ordered some milk during the day. Called again at 5 P. M. Found him somewhat easier; pulse 100; joints not so tender; appetite returning:

R.—Ext. aconitis grs. iv., Ext. hyosciam. gr. ij., Sulph. quiniæ grs. vj.—M. Ft. in pill, No. ij; one at 7 P. M., and the other in

five or six hours; if no sleep, continue the application of liniment to the affected joints.

23d.—Patient better; slept quite well during the night; pulse soft and about 90; tongue clean, moist; appetite fair, returning; the joints of his legs are yet somewhat swollen, and painful when moved; no redness however. Ordered the following:

R.—Tinc. aconitis gtt. xv., Syrup. limonis ʒss.—M. Dose, teaspoonful ter die. Continue the liniment to the joints.

24th, A. M.—Patient up and doing well; appetite good; urine indicating some excess of uric acid—for which ordered sodæ bicarb. grs. x. in wine-glass of water, three times a-day; Dover's powders gr. v. at bed-time, and dismissed.

From these cases, together with others which have fallen into my hands, I believe it clearly apparent that the ACONITE treatment, together with a little mercury, where foul tongue and offensive breath indicate disordered secretions of the primæ viæ, is that which promises the most speedy cure. This treatment, together with some one of the alkalies, where the urine indicates an excess of uric acid, is that which I have generally adopted. After dismissing my patients, I usually order, for a day or two, a few grains of iodide potassium with syrup of gentian.

TRANSLATIONS AND SELECTIONS.

I. *Clinical Lectures on the Diseases of Women*, by J. Y. SIMPSON, M. D., F.R.S.E., *Professor of Medicine and Midwifery in the University of Edinburgh.*

GENTLEMEN,—With perhaps one single exception, I have now discussed all the means of treatment, Medical and Surgical, which are usually employed for the palliation or cure of Ovarian Dropsy. I have tried to point out to you the respective dangers and advantages of each different mode of treatment; and so far as my judgment and experience have enabled me to decide upon their comparative merits, I have endeavored to guide you to a proper estimate of their relative value, and to a correct appreciation of the results likely to ensue from their adoption. From what I have told you, you will have gathered that there is no one form of treatment which should be carried out constantly in all cases, or in preference to all the others. Rather, I hope, you have concluded that for the enforcement of any plan of treatment in any particular case you must be guided by a judicious Eclecticism, carefully weighing the chances of death or the prospects of cure attendant on each form of operation, and choosing that which affords most hope of permanent benefit and entails least immediate risk in that special kind of case. But if I have spoken clearly, you must have learnt further that, although a permanent and perfect cure may and does sometimes result from the performance of the operations already described, yet each and all of them may fail in effecting a cure, or even in producing more than the most temporary relief. Nay more, there is not one of them that is altogether free from danger; while some of them are fatal in a high degree. Hence you may meet in practice with cases where you cannot see your way to the employment of any of them. You may also meet with a patient who has been tapped again and again without the slightest benefit; or in whom the injection of iodine offers little chance of cure from the multitude of comparatively minute cysts; or where the formation of a fistula leading outwards cannot be followed out without the prospect of the most disastrous consequences; where the letting out of the fluid into the peritoneal cavity would prove almost certainly fatal, and where none of the other

forms of operative treatment need for a moment be thought of. In such a case you may well inquire whether there be not yet some other means which might afford your patient a chance of life, or whether you must stand by, impotent and powerless, and see her slowly and helplessly perish? The question has been already answered, to some extent, and many women who seemed doomed to die of this disease now live in the enjoyment of perfect health, and thankful to the bold and skilful men who freed them from their trouble by the successful performance of a dangerous and difficult operation. In such cases a complete cure has been effected by making an incision through the abdominal wall, tying the pedicle of the ovarian tumor, and cutting off the whole of the morbid mass. I allude, of course, to the operation of ovariectomy. I need say but little with regard to the

History of the Operation.

Excision of the ovaries, as you know, has long been performed and practised in the lower animals. This operation of "spaying," as it is called, is performed with the view of preventing the animals from breeding, and for the purpose of more rapidly fattening them. As applied to the human female also, the operation is not a new one. Athenæus, in his *Deipnosophists*,—that strange and gossiping medley of the ancient "Curiosities of Literature"—tells us, on the authority of Xanthus, that "Adramyttes the King of the Lydians, was the first man who ever castrated women, and used female eunuchs instead of male eunuchs;" and a similar practice is said to have been followed by several kings, and among a few nations of antiquity. Coming down to a much later period, we find Boerhaave relating that a swine-spayer once castrated his daughter, as being the most effectual means of putting an end to her licentious practices. But perhaps the first occasion where extirpation of the ovaries was had recourse to as a surgical operation, was when Percival Pott cut down upon a small tumor in either groin of a young female, and removed from both sides a body which had all the appearance of an ovary, and which was apparently—as proved by the physiological results, as well as by anatomy—nothing else than this organ contained in a hernial sac, and liable to pain on compression in its new position. It is usually stated that L'Aumonier, of Rouen, was the first to perform ovariectomy, in 1776; but besides that it had been done before his time, it appears when the history of his case is looked into, that his operation rather consisted of the opening of a pelvic abscess in a puerperal female, by cutting through the abdominal walls, and removing the ovary along with some of the other structures at the side of the uterus. The

operation of ovariectomy, as now understood and practised, was not in reality methodically performed till the beginning of the present century. The propriety of removing ovaries which had become the seat of cystic or other forms of degeneration had been discussed previously, and defended by Plater, Vanderhaar, Delaporte, Morand, and others; while Diemerbroeck, De Haen, Morgagni, etc., gave expression to unfavorable opinions. But Dr. Ephraim McDowell, of Kentucky, seems to have been the first practitioner who actually performed excision of the ovary in the case of a patient who was the subject of ovarian dropsy; and this operation, which was performed in 1809, proved so successful that he had recourse to it in at least eight cases afterwards. For a time it was not adopted by any other surgeons. In 1823 it was taken up by Mr. Lizars, of this city, who opened the abdominal cavity for the purpose of performing ovariectomy in four cases. In one of the four patients no tumor at all was found; in a second patient the tumor was not ovarian, but a pediculated fibroid tumor of the uterus, arising from the fundus, and was left unremoved. This patient lived for above a quarter of a century afterwards, and I saw her body opened by Dr. Myrtle. Both ovaries were small and healthy. In only two cases did Mr. Lizars find an enlarged ovary and remove it. One of these two patients died; the other recovered, and lived for some years. I here show the appearances represented by the abdominal organs in this last patient, as seen after death. There is no trace, you will observe, of any return of ovarian tumor, and the parts at the seat of the extirpated ovary are strongly adherent and matted together. Mr. Lizars' results were such as not to encourage surgeons to follow him; nor did he himself persevere in testing further the propriety of operation. Indeed, the revival of it is principally due to the exertions and example of Dr. Clay, of Manchester, who operated on his first case in 1842. Since that time Dr. Atlee, of Pennsylvania, Mr. Spencer Wells, and various others, have performed the operation in a great number of cases. It has now been performed probably nearly 400 times in all, although the published statistical data do not show the result in many more than 300 cases. Dr. Clay has himself operated now in 93 cases. The operation, however, has met with great opposition from all classes in the Profession; and before proceeding further it will be well for us to inquire into some of the more ordinary

Objections to Ovariectomy.

1. *It is a Dangerous Operation.*—It has been objected to ovariectomy, first of all, that it is a very dangerous and formidable operation; and as a matter of fact the observation can-

not be gainsaid. To open into the abdominal cavity of any patient, and remove from it a large morbid mass, is to expose that patient to many great perils, both immediate and more remote, however skilfully the operation may be conducted, and however sound the constitution of the patient herself may be. But if an operation must be rejected simply on the mere ground that it is dangerous, then there is an end to all the efforts of Surgery; for no operation that is ever performed—not even the most trifling—is altogether free from danger. But this operation of ovariectomy, it is averred, is so much more dangerous than any other kind of operative procedure that it ought not to be recognised and performed as a legitimate surgical proceeding. Let us see how far this allegation is founded on fact, by comparing the mortality from ovariectomy with the mortality from other capital operations, which are not only considered as legitimate, but which surgeons count it a glory to perform. You will be best able to form a correct idea of the relative degree of mortality resulting from ovariectomy, as compared with other capital operations, if I set before you in a tabular form the results as they have been reported by different surgeons, or as occurring in different hospitals:

TABLE I.—*Mortality after Ovariectomy and after various other Capital Operations.*

Reporter.	Nature of Operation.	No. of Cases.	No. of Deaths.	Proportion of Deaths.
Fock,	Ovariectomy,	292	120	41 in 100, or 1 in 2½.
Atlee,	Ditto,	179	59	33 in 100, or nearly 1 in 3.
Simon,	Ditto,	44	32	73 in 100, or 1 in 1⅓.
Clay,	Ditto,	93	29	31 in 100, or 1 in 3 1-5.
Peacock,	Amputation of limbs,	72	35	49 in 100, or 1 in 2.
Cooper and Inman,	Herniotomy,	622	296	47 in 100, or 1 in 2 1-10.
Various Surgeons,	Ligature of innominate artery,	14	14	All those operated on have died.
Inman,	Ditto of subclavian,	40	18	45 in 100, or nearly 1 in 2 7-10.
Inman and Phillips,	Ditto of other large arteries,	370	123	33 in 100, or 1 in 3.
Cox,	Amputation at hip-joint for chronic disease,	24	18	75 in 100, or 1 in 1½.
Malgaigne,	Amputations of limbs,	852	332	33 in 100, or nearly 1 in 2½.
Malgaigne,	Ditto of thigh,	200	122	61 in 100, or 1 in 1 3-5.
Lawrie,	Ditto of limbs,	276	101	36-6 in 100, or 1 in 2 7-10.
Fenwick,	Ditto,	4937	1565	32 in 100, or 1 in 3 1-15.

The table does not profess to give an accurate analysis of the results in all cases of ovariectomy, any more than it shows the precise amount of mortality attendant on all the other kinds of operation referred to. The mortality from ovariectomy, like the mortality from other operations, differs much at different times, and when performed by different operators. In Germany they have been particularly unfortunate with this operation; and hence the statistics of Simon—which refer exclusively to cases operated on in Germany—show a tremendously high rate of mortality. It is difficult to understand why the operation should have proved so fatal in the hands of operators so distinguished as Kiwisch, of Würzburg, and Langenbeck, of Berlin; the latter of whom lost five out of the seven patients on whom he operated, while the former had as high a rate of mortality as one in two. This want of success is all the more striking when we contrast the results of the operation, as performed by these men, with the results obtained by Drs. Clay and Atlee from the same operation; the latter of whom has lost only one in three patients, while the former has had so low a rate of mortality as one in three and a fifth of the whole number of patients operated on. But, taking the data of the laboriously-compiled analysis of Fock, as presenting a fair average of the general results of the operation up to within the last few years, you will perceive that we have a mortality attending ovariectomy of about forty-one per cent.—or, in other words, two patients die out of every five operated upon. Now, if you compare this rate of mortality with the rate of mortality attendant on other great operations, you will find that ovariectomy is less fatal than some, and but slightly more formidable and dangerous than others. It is hardly more fatal, for example, than amputations of limbs are shown by Malgaigne to have been in the great Hospitals of Paris, where about thirty-nine per cent. of all the patients die after amputation of the leg, thigh, and arm; and it is less fatal than the same kinds of operation are shown by the statistics of Dr. Peacock to have been in our own Edinburgh Infirmary, where more than forty-eight per cent. of all the patients subjected to amputation of the arm and thigh died from the effects of the operation. It is less fatal than herniotomy; less fatal than the operation of tying the subclavian artery; less fatal than amputation of the thigh; and far less fatal than amputation at the hip-joint. Well, then, if ovariectomy is to be condemned as an unjustifiable operation, and rejected altogether from surgical practice, on the simple ground of the high rate of mortality attendant upon its performance, then, to be consistent, surgeons must cease to perform various other operations which

have been shown to be on the same level with ovariectomy as regards their ratio of mortality, or even to be more fatal than ovariectomy. They seem to regard the ligature of the arteria inominata as justifiable, though every patient upon whom the operation is performed dies, though they regard ovariectomy as not justifiable, though three out of five operated upon recover. But it is argued by some surgeons that, though this operation may not be more fatal than some others which they think they do right to perform, yet ovariectomy is an operation to be eschewed because, in all proper and justifiable operations, the rate of mortality goes on diminishing with our advanced knowledge of their particular requirements, and with our improved means of carrying them out; while, in the case of ovariectomy, the rate of mortality does not diminish; but, they argue,

2. *The Operation is as Fatal now as it was at first.*—This objection might be held to be of some weight, if only it were founded indubitably on fact. But it seems to be doubtful, if not utterly erroneous, and is probably traceable to the practice, too commonly pursued by writers on this subject, of giving only the general result of all the operations that have ever been performed, without making any analysis or statement as to the difference in the mortality of the later, as compared with that of the earlier cases in which the operation was had recourse to. For if we look at the results of the operation as it has been performed by men who have specially directed their attention to it, with the view of finding what difference there is between the mortality of their earlier and that of their later cases, we discover a very striking and most convincing contrast. Thus Dr. Atlee records that

In the first 101 Operations there was 1 death in every $2\frac{2}{3}$ cases, while
In the last 78 “ “ “ 1 death “ 3 5-7 cases.

thus showing a diminution of nearly ten per cent. in the rate of mortality in the last as compared with the first set of operations. Again, an analysis of Dr. Clay's cases furnishes a still more convincing proof of the fallacy of the objection to ovariectomy which we are now considering. Dr. Clay published the following table of the results of his operations in the year 1856, up to which time he had performed it in 71 cases:

In the first 20 Operations there was 1 death in every $2\frac{1}{2}$ cases.
In the second 20 “ “ “ 1 death “ $3\frac{1}{2}$ cases, while
In the last 31 “ “ “ 1 death “ 4 cases.

Such a table shows how in the hands of a careful and intelligent operator, the mortality from this severe operation may go on diminishing, till now Dr. Clay is able to perform ovari-

otomy with a better prospect of success than surgeons can ever have when having recourse to some of the more serious though very common surgical operations. Perhaps, if a corresponding analysis of the general mass of operations that have been performed up to the present period were made, we might find a corresponding progressive diminution of the general mortality. The results of the operation in the hands of one operator, at least, are not included in the table I have given. I refer to those of Mr Spencer Wells, who has latterly devoted much attention to the improvement of ovariectomy, and who tells me that he has performed the operation now in sixteen cases, and has lost only six of his patients. In other words, the operation has been attended, in the hands of Mr. Wells, with a mortality of $37\frac{1}{2}$ per cent., or of 1 in $2\frac{3}{4}$ of all the cases—a high ratio of mortality, no doubt, but still, as he remarks, less than that attendant in our Metropolitan Hospitals on lithotomy in the adult, or amputation of the thigh. Indeed there seems good ground for hoping that when the operation comes to be still further improved, and is carefully performed in properly-adapted cases, the general mortality may yet be reduced to as low or even to a still lower standard. Even taking the mortality as it at present stands, I think I have said enough to convince you that ovariectomy is no more deserving of condemnation on the ground of its mere fatality than many other approved operations, and that it not only may be, but has been improved upon in the course of years during which it has been performed to such a degree as greatly to reduce the ratio of its attendant mortality.

3. *The Disease is Liable to Return after the Operation.*—

It has been urged, further, as an objection to the performance of ovariectomy, that the ultimate results are apt to be unfavorable; for that, even supposing the patient to have survived all the more immediate dangers of the operation, the tumor is liable to be reproduced, and then the patient is found to have been exposed to most imminent danger without becoming cured of her disease. Of all the arguments that have been brought forward in opposition to the performance of ovariectomy, I know none more unsound than this; for a recurrence of ovarian dropsy in a patient who has been subjected to excision of a dropsical ovary is, indeed, a very rare phenomenon. The only conditions under which such apparent reproduction of the disease can occur are found in those cases where, after the removal of one enlarged ovary, the other, which may have been at the time quite healthy, or only in a state of commencing cystic degeneration, takes on a rapid degree of development, and ultimately attains a size equal to that of the organ already

extirpated. In the great majority of cases where the operation has been had recourse to, the disease has been found confined to the ovary of one side only; and in removing that we remove the entire mass of the tissue which has a tendency to undergo cystic degeneration, leaving only the pedicle of the tumor, which is never likely to be the seat of such a morbid change. It is, in fact, one of the very few forms of morbid growth with the almost absolute certainty of freeing the patient, at once and forever, of her disease. So far from finding it liable to recur, patients who have been subjected to the operation are now known to have survived for many long years, and sometimes to have subsequently given birth to children. But those who bring forward the possibility of the reproduction of the disease as an argument against the performance of ovariectomy, use a double-edged weapon; for the objection might be urged with tenfold greater force against operations almost daily performed and perpetrated by surgeons who plume themselves upon performing legitimate operations only. How frequently, for instance, have you all seen limbs lopped off for tubercular diseases of joints or bones in the case of patients who are almost sure to die soon after from the development of the same disease in the lungs or some other internal organs? There are few operations in surgery more common than extirpation of the mammae for scirrhus degeneration of the gland, and amputations of limbs which are affected with carcinoma, are of very frequent occurrence in practice. Yet, with what chance of ultimate success, think you, are these amputations and extirpations of malignantly-affected members had recourse to? Why, with the almost perfect certainty that the disease will return either in its former site, or in some other organ, and that at no very indefinite or distant date. In the case of lithotomy, again, the chances of the re-formation of vesical calculus are incalculably greater than the chances of the re-production of an ovarian tumor in a patient subjected to ovariectomy. And, finally, to take once more as a standard of comparison, the operation of ligaturing of large arteries for the cure of aneurism, which we saw to be, on the whole, as fatal as the operation of ovariectomy, is it not the case that a patient who has aneurismal disease at one point of his arterial system, is extremely likely to have it simultaneously or subsequently in other parts? and when any kind of cure of the most prominent and pressing aneurismal growth has been effected, is it not the case that the disease is then disposed to become more rapidly developed, and more distinct and dangerous in some of the other arteries? If, then, the possibility of the recurrence of the disease be regarded as an argument of any

weight against the performance of ovariectomy, it must be held as weighing in a still greater degree against the performance of those other forms of operation where we see the possibility of the reproduction of the disease converted into a probability, or changing to an almost absolute certainty.

4. *The Condition of the Patient is not Improved.*—Again, it has been argued that a patient subjected to ovariectomy is not only not secured against the ultimate recurrence of her disease, but that she is left in a more infirm state of health after the operation than she would have been had her disease been allowed to run its usual course. Now, so far is this allegation from being true, that, as I have already stated, women subjected to this operation have sometimes borne families afterwards, and may have lived for many long years in the enjoyment of the most perfect good health. And if it does happen in some few cases that the patient remains for some time afterwards infirm and invalid, we know that the same thing happens often enough after the operation of lithotomy; for many adult patients who survive that operation, only do so to linger on as hopeless and confirmed valetudinarians. Very few of those who have had the thigh amputated have attained old age; and the ablation of a large portion of the body seems materially to affect the chances of long life. We very rarely know anything of the after-history of patients subjected to the so-called “capital operations” of surgery, and perhaps if we had any means of tracing on a large scale the subsequent progress of such patients, we might find that in the general mass, the fact of having gone through any serious operation militates in no small degree against the prolongation of the patient's life; or, to state the matter more correctly, as regards some cases, the existence of any morbid condition or disease which necessitates a serious and grave operation, is generally a state that is adverse to the hopes and chances of prolonged existence.—*Med. Times and Gazette.*

II. *Lectures on Experimental Pathology and Operative Physiology*, delivered at the College of France, during the Winter session 1859-60. By M. CLAUDE BERNARD, Member of the French Institute, Professor of General Physiology at the Faculty of Sciences.

ON CATALYSIS.

GENTLEMEN,—In a preceding lecture we endeavored to convince you that idiosyncrasies ought to be referred to certain

peculiar organic predispositions, which, far from introducing physiological laws of an entirely novel character into the economy, are the natural result of the properties enjoyed by the nervous system.

We have already stated, that animals debilitated by want of proper nourishment submit less readily to the agency of certain poisons than others in a vigorous state of health; but, as you are aware, it has been questioned whether similar modifications are due to nervous influence, and whether the diminished activity of the absorbent powers is not sufficient to explain them. In order to settle the question at once, I injected an aqueous solution of woorara into the veins of two rabbits, one of whom had been previously fasting, while the other was duly fed; in this manner, absorption was entirely dispensed with, the poison being at once conveyed into the blood. The result was such as might have been expected. To poison the fasting animal a dose larger by one-third was required than had been found sufficient to destroy the other. It is, therefore, perfectly clear that all this class of phenomena must be entirely referred to the agency of the nervous system.

But, while the animal is in some measure preserved from the noxious influence of certain poisons, through the rapidly-increasing debility of its nervous system, it becomes obnoxious to the action of morbid influences of a totally different character. It even appears to me, that in our nosological classifications this peculiar liability of the system might be turned to account, as regards the etiology of disease.

To adduce a characteristic instance of this: when frogs have been kept for a long space of time in captivity, their health declines, and ulcerations arise around the nose and mouth; the nervous system being in this case considerably depressed, the animal is of course found to resist much longer the action of strychnia and similar poisons, while parasitical affections spread with fearful rapidity. Frogs are subject to the growth of parasitical fungi, which, after a certain lapse of time, occasion the animal's death. Now, if a healthy frog is placed in a jar, containing others affected with the above-mentioned disease, the new-comer sets contagion at defiance; while if another frog, affected with ulcerations in the vicinity of the natural orifices, is introduced into the jar, the parasitical vegetation covers it at once.

It has been found that similar affections always have a strong tendency to arise in animals in a low state of health. The itch, a disease which frequently prevails among horses and sheep, is scarcely ever found to attack animals in good condition; and, in man, the lower classes are known to be a prey to

vermin, especially in childhood and old age; while persons who live under more favorable circumstances are scarcely ever affected with this inconvenience, except towards the latter end of long and painful diseases; for it is generally in such cases that the *morbus pedicularis* has been observed.

The decrease of nervous power equally constitutes a predisposition to putrid, contagious, and virulent affections; the fact is well known to veterinary surgeons.

It would appear, therefore, that an apposition exists between the two great classes of disease we have just examined; in proportion as the animal grows more sensible to the action of neurosthenic poisons, the power of resisting the influence of putrid substances is increased. How is the difference to be accounted for? We shall attempt to give you a solution of the difficulty.

That the chemical composition of the blood should incessantly be modified, is one of the essential conditions of life; repairing, as it does, the daily losses of the economy, and renewing the elements of all the tissues which enter into the system, the blood may be compared to a torrent which continually pours out new substances, while other elements are flowing into it; and the stronger are the animal's vital powers, the more rapid are the successive changes of the blood; a fact principally observed in birds, which enjoy greater vital energy than any other class of animals. The uninterrupted continuance of circulation is, therefore, in such animals, of still greater importance than in others; the blood cannot stagnate without promptly acquiring septic properties. If the tributary vessels of a muscle are tied in a mammal or bird, it becomes a putrid mass within twenty-four hours; in a batrachian this change would not take place before a much longer space of time.

Now, you are aware that the nervous system presides over all the phenomena of life in which motion is concerned; as soon, therefore, as the nerves are impaired, circulation languishes, and the chemical composition of the blood becomes thereby liable to important changes. If, therefore, an animal being given, it is our purpose to preserve it from the action of woorara, or similar poisons, we must lower its forces. If, on the contrary, we intend to preserve it from contagious diseases we must increase them by all possible means.

But these septic bodies, or specific poisons, are almost invariably organic substances, and are produced within a living organization; here we have, no doubt, a peculiar and characteristic biological action; we need not, therefore, be surprised to see pathologists endeavoring to withdraw this class of phe-

nomena from the the domain of physiology, in order to make them the exclusive property of Medicine.

We must not, however, in my opinion, give up all hope of connecting, one day, these morbid phenomena with the laws of physiology. If at present unable to do so, we shall no doubt succeed at some future period. Is it not, in fact, quite possible that in animals certain physiological conditions may arise, which would give birth to virulent poisons? We are aware that in a perfect state of health, several creatures are venomous; that is to say, they possess a peculiar virus which Nature has given them for the purpose of killing their prey, and defending themselves from their enemies. Here, then, we have a physiological virus; how is it produced within the system? The difficulty is quite as great as with regard to morbid poisons.

It would appear that in several cases the noxious substance prevails throughout the economy; in other cases we only discover it in certain fluids. The virus which occasions hydrophobia belongs to the latter class; it resides exclusively in the animal's saliva. We are not yet aware whether any one of the salivary glands is its peculiar seat, or whether it is indifferently secreted by all of them. No experiments have been tried on this point; but it has been experimentally proved that the peculiar venomous principle does not exist in the blood; transfusion does not convey the disease from a mad dog to a healthy one.

It is a singular fact, and one which pre-eminently deserves our attention, that in so general a disease the virus, which alone is capable of transmitting the affection, should be exclusively localized within one single apparatus, without existing in the blood at large. Yet, if we reflect upon the question, we discover, in the physiological state, a great many similar dispositions; the principles which concur in a vast number of physiological functions; pepsine, ptyaline, and the active principle of the pancreatic juice, are they not created by special glands? and is not the venom of serpents, which does not exist within the blood, produced by a special apparatus? Viewed in this light a mad dog resembles a viper or a rattlesnake.

But, on the other hand, there exist several virulent diseases, in which the blood really appears to contain the morbid principle. This is the case with the glanders; and it is a well-known fact that healthy animals may be infected with the blood of a diseased horse, as well as with the slimy matter that escapes from the nose and mouth.

But another particular, which will, perhaps, excite your astonishment, is that the normal secretions, bile, saliva, gastric juice, and so forth, do not appear to contain the slightest ves-

tige of this poison; while, on the other hand, the pathological fluids appear to be impregnated with it, and possess the property of transmitting the disease to sound animals—a fact experimentally proved with regard to pus, the fluid contained in a hydrocele, and various other morbid secretions. For this reason alone are the autopsies performed on animals that die of the glanders attended with so much danger; the virus pervades the whole system, and the slightest wound is sufficient to inoculate the complaint.

You need not, however, be astonished at this singular property; you have already witnessed the repulsion which the salivary glands evince for certain substances introduced into the blood; and why should not certain morbid principles be in this manner rejected from all the secretions in which the normal conditions remain unimpaired? the same thing appears to take place with respect to the contagious pneumonia of horned cattle. We are aware that volatile emanations transmit the morbid principle; but experiments have been tried (in Belgium) for the purpose of inoculating it directly to animals, as a preservative against the disease. Something similar to the process of inoculation in the small-pox was expected to result from this; it was then discovered that neither the animal's blood nor any of the fluids of the economy was endowed with the property of propagating the complaint. It appears to have chosen the lung for its exclusive seat, and the liquids therein contained, pus, lymph, etc., are alone endowed with the property of transmitting the complaint. The intense local inflammation which follows the operation sufficiently testifies to the noxious properties of this virus; and when, in order not to spoil the animal's flesh, the tail is selected as the point where inoculation is to be performed, the subsequent inflammation frequently causes it to mortify.

Here, then, we have another virus which exclusively resides in the tissue of the lungs, and is not found in the blood at large; but even in the normal state a great many substances are found in various tissues, which do not exist in this fluid. Thus, muscular flesh contains a large amount of salts of potash, while scarcely any trace of them is found in the blood; in a word, the various bodies found in different parts of the economy are not invariably represented in the torrent of the circulation.

The history of specific diseases offers, therefore, nothing which cannot rationally be explained; it now remains for us to discover the physiological process by which a virus may be originated. Nothing is easier than to produce putrid affections in sound animals. Thus, when transfusion is performed under

the ordinary conditions—when the blood is conveyed directly from one animal into the veins of another—no accidents whatever are produced; but if the blood is allowed to remain for a short space of time in contact with the atmosphere, and if the serum is then injected into the vessels, all the symptoms of putrid resorption are observed, and the animals die after exhibiting all the characteristic symptoms of putrid infection.

The blood is therefore capable of acquiring toxic properties without the intervention of any foreign principle, merely through the modifications which take place in its composition when life is extinct. The same results may be attained to without even drawing blood from the veins. If the blood of a fasting animal is directly injected into the veins of a healthy one, the latter is poisoned exactly in the same manner as before; and yet the blood, in this case, has not undergone any previous decomposition.

The introduction of foreign principles, of course, acts, upon the blood with still more intensity; nearly all the substances known under the name of *ferments*, are endowed with the property communicating a deleterious influence to this fluid. When yeast is introduced into an animal's veins, passive hæmorrhage, and other adynamic symptoms, are immediately produced, and death takes place within a few days. Now, if the animal's blood is transfused into another's veins, all the phenomena previously described take place in rapid succession, exactly as if yeast, and not blood, had been directly poured into the vessels.

It seems likely that in this case a series of decompositions take place within the blood, which give rise to other *ferments*. The well-known experiment related in Pringle's work on Army Diseases, appears to tally with the result of our own experiments.

(In order to prove the influence of putrid emanations, even at a distance, on the chemical phenomena of life, he plunged a thread into the yolk of a rotten egg, and then suspended it in a jar containing the yolk of another egg, and under these circumstances, decomposition took place with far greater rapidity than usual.)

We, therefore, perceive that all this series of phenomena holds intimate connection with that mysterious chemical process known under the name of *catalysis*. The theory of fermentation is at present so imperfectly known—and organic chemistry has in this respect made, as yet, so little progress—that it would hardly be fair to reproach medicine with its deficiencies on this point. There exists a whole series of diseases which evidently result from the chemical actions which

take place within the body. It is, therefore, chemistry alone, which, in its future progress, can teach us the physiological laws which embrace this particular branch of medicine.—*Ibid.*

III.—*Observations on some of the Daily Changes of the Urine.* By WM. ROBERTS, M. D., Physician to the Manchester Royal Infirmary. (Ed. Med. Journal.)

THE functions of the kidneys differ from those of all other secretory glands, in being exclusively depurative and excrementitious. Other glands have compound offices: either they are charged with some additional duty totally different from their excretory function, or their secretion has some important service to perform before quitting the system—more important, perhaps, than the purifying effect of its separation from the blood. The lungs, for example, not only exhale carbonic acid, but, in addition, absorb oxygen; and the watery vapour which they discharge serves more to keep the respiratory surface moist than to reduce the aqueousness of the blood. The passage of water and sebaceous matter through the skin, likewise, has not merely an eliminative purpose, but also the far more important ends of regulating the bodily temperature and molifying the external integument.

The bile, the pancreatic and salivary fluids, together with the other varied secretions poured into the alimentary canal, have all weighty offices to perform before making a final exit; but the urine is altogether an excrement, which must be carried off as soon as it is separated from the blood, and ejected from the economy with all convenient haste.

For this reason the study of the urine holds a place of capital importance in the investigation of the vital processes in the healthy state. "By their fruits shall ye know them;" and of all the fruits of final issues of the vital operations, there is none so direct, so abundant, and so accessible as the urine.

And if the urine have this interest for the physiologist, it has no less interest for the pathologist. For our best estimate of internal and general disease is derived from a study of the altered functions; and, as the physiologist looks to the renal secretion as a mirror of the healthy operations, so should the

pathologist, in the diseased state, search for a reflection of the disordered functions in the same secretion.

But before a medical practitioner can draw exact information from the character of the urine, he must know what appearances and conditions of it are compatible with health, and what are not. Disease and health are conterminous; it is, therefore, necessary to know whereabouts the line of demarcation runs. Experience leads me to believe that far more error has arisen from faulty appreciation of the immense variations in healthy urine, than from failing to detect positive indications of disease.

If it be considered how the conditions of ordinary life change from hour to hour, the occurrence of frequent variations in the chief final product will cease to be wondered at. Sometimes we are asleep, sometimes awake; at one time satisfied with food and drink, at another fasting; now in comparative inactivity, then in active mental or muscular exercise. Again, there are changes of season, of temperature, and of meteoric conditions; also endless variety of ingesta, not, strictly speaking, food—tea, coffee, alcoholic beverages, tobacco, and medicines administered by the practitioner. All these things are quickly reflected in the composition of the urine; and it is often a difficult task to discriminate between such harmless, if not normal, variations, and the more serious alterations that signify disease.

There is no safety from misapprehension except in a thorough familiarity with the extent and nature of the variations in health; and, as yet, these are far from being entirely known. The object of this paper is to contribute something toward this knowledge; and its scope is to consider especially some of the variations which the urine in health undergoes, at different parts of the same day, from *food, drink and sleep*, but, in particular, from food.

The experiments and observations which follow were made chiefly with a view of determining the oscillations in *re-action* to which the urine is subject; but incidentally to this they included an account of the *hourly rate of flow*, the *specific gravity*, the quantity of *phosphates* and of *uric acid*; together with the condition of the urine as to *clearness or turbidity* on passing, as well as after cooling and standing.

What relates to the re-action is detailed at length in a contribution to the *Memoirs of the Manchester Literary and Philosophical Society* for 1859; and it will, therefore, appear here only in abstract, and as part of a wider inquiry.

All the observations herein detailed concerned a single indi-

vidual. He was a healthy man, twenty-eight years of age, taking moderate exercise, living in most favorable hygienic conditions, and weighing 144 lbs.

In order to ascertain the nature and exact amount of the diurnal changes undergone by the urine, it was thought essential to collect the secretion at each hourly period succeeding a meal. At periods more remote from meal-times the secretion was usually collected every two hours. The period of sleep (six hours) constituted a single observation.

To prevent confusion, from the effect of one meal running into the succeeding one, food was taken twice a day only.

The following particulars were taken of each urine, and arranged in a tabular form: 1. *The time of day during which it was secreted.* 2. *The quantity; from the quantity the hourly rate of flow was obtained.* 3. *The density.* 4. *The solid matters.* 5. *The re-action.* The degree of acidity or alkalinity was ascertained by a test solution in the usual manner for volumetrical analyses. For the former, a solution of caustic soda was employed, and for the latter dilute sulphuric acid. 6. *The appearance of the urine.* The clearness or turbidity of the urine *on passing*, as well as *on standing*, was recorded, together with any peculiarity of color or odor.

The mode of life of the subject of experiment was kept as nearly as possible uniform during the time of observation. He usually rose at seven, breakfasted at eight, dined at two, sometimes at four, and took no further food until breakfast next morning. He retired to rest at one in the morning; so that, when the days of observation were successive, there were but six hours of sleep. As to occupation and exercise, there were necessarily some irregularities, but these were reduced to a minimum. Various engaged in-doors until ten or eleven in the morning, moderate out-of-door exercise was afterwards taken until one or two. After dinner, occupation was sedentary for two or three hours; then moderate out-of-door exercise was taken for one or more hours. Care was taken to avoid any violent or protracted exertion on the one hand, or a complete inactivity on the other.

The observations fall into six sets, each set embracing from three to seven days. The first two sets include observations with the use of an ordinary mixed diet; the next two, with an exclusively vegetable fare; and the last two, with a diet composed of animal flesh only.

I will now proceed to consider the diurnal variations observed, in the order already given. It must be borne in mind

that, as this inquiry is but fragmentary, there are many conditions and components of the urine, not here touched upon, which undergo variation in the course of the day; but as they formed no part of this investigation, they are altogether omitted from consideration.

1. *The Quantity of the Urine.*—The daily mean for ten days, on ordinary diet, was 46 fluid ounces; giving an hourly mean of 2 fluid ounces. But the flow was very far from being equable. It rose after meals, and fell during fasting; sinking to a minimum in the hours of sleep. A very wide range of variation is obtained on comparing the maxima and minima. On one occasion, after dinner, 16 ounces were discharged in an hour; on another occasion, after taking half a pound of sugar and a glass of water on an empty stomach, 17 ounces and 6 drachms flowed in forty minutes, or at the rate of $26\frac{1}{2}$ ounces per hour.

In other states of the body, the rate of flow became greatly depressed. During sleep, for example, it sank to an average of half an ounce per hour; and one evening, after prolonged fasting, the hourly flow fell to $2\frac{1}{2}$ drachms; showing that in perfect health the stream of urine may run at one period eighty-five times stronger than at another. This extraordinary range of variation, in the flow of the urine, is a point of practical interest, as will presently appear. An hourly rate of from 12 to 16 ounces was frequently observed after dinner, or after one or two cups of tea in the evening. If this rate continued for the entire twenty-four hours, 8 or 10 quarts a day would be discharged; and if the highest rate observed were to persist, 15 quarts would flow in the same time.

The oscillations appeared to follow a very constant rule, one day with another, so long as the times of the meals remained the same; and their ordinary sequence and amount may be appreciated by following the changes observed on one day—for example, the 15th of March, which presented no unusual features. On this day no fluid or solid was taken after dinner, at 2 P. M.:

	Breakfast.															
Time of day,	7-8 A. M.		8-9		9-10		10-11		11-12		12-2 P. M.					
Hourly rate,	oz.	dr.	oz.	dr.	oz.	dr.	oz.	dr.	oz.	dr.	oz.	dr.				
	0	6	1	0	2	0	1	4	1	7	1	3				
	Dinner.										Sleep.					
Time of day,	2-3 P. M.		3-4		4-5		5-6		6-7		7-9		9-11	11-7 A. M.		
Hourly rate,	oz.	dr.	oz.	dr.	oz.	dr.	oz.	dr.	oz.	dr.	oz.	dr.	oz.	dr.		
	1	2	10	0	2	3	2	3	2	9	1	4	1	0	0	4

After each meal, but especially after dinner, there was considerable increase of the hourly flow; but, as fasting continued, the quantity steadily diminished until the next meal. As might have been anticipated, these variations depended almost entirely on the watery part, and very little on the solid residue of the urine. Drinking water, however, did not necessarily cause an immediate flow of urine. If the system was in need of water, as was the case in the early morning, after the hours of sleep, no diuresis followed drinking; and this is why breakfast was only succeeded by a slight increase. After an early dinner, the conditions were usually different. There was no lack of water to be supplied; and if a pint or so of water was drunk with the meal, it was speedily discharged. When the blood was overcharged with water, the excess was not gradually, but suddenly expelled, and then the equable flow returned. It was invariably found that if more water was drunk at dinner than the system required, the excess ran over during the second hour, causing a sudden but brief diuresis. This summary expulsion of superfluous liquid is still more strikingly observed when a glass of water or beer is taken four or five hours after breakfast, when the morning meal has been fully absorbed, and the system is sufficiently supplied with water. In twenty minutes or half an hour, liquid so taken passes through the kidneys, and calls for emission.

Reflecting on these and the other facts just related, one is led to think that the arrangement for filtering watery fluid through the kidneys is of a mechanical rather than a vital nature; and that hence arises its apparently almost illimitable power. If this be true doctrine, and there exist in the kidneys

a facility for causing ten or twelve quarts of water daily to pass through the urinary conduits without at all taxing the vital powers, have we not here a safe and powerful therapeutic engine? May not this power be used more systematically, and to a far greater extent than has hitherto been attempted, to aid the action of solvents on renal or vesical calculi, and for washing out the bladder in chronic cystitis?

[The following example illustrates the successful adoption of this *potation* treatment for chronic cystitis: Peter Craig, æt. 70, was admitted into the Manchester Infirmary under my care, Jan. 1859. . . . He complained of constant desire to make water, of great pain and smarting in the act of micturition. On examining the urine, it was found loaded with pus, which formed a deposit of an inch thick in the urine-glass. The pus was thick and stringy, from the high ammoniacal condition of the urine. The urine became ammoniacal even before leaving the bladder, and the stringy pus often caused intense torture by plugging up the urethra, already considerably narrowed from old stricture. Micturition took place almost every ten minutes, night and day, so that he was reduced to great weakness from pain and loss of sleep. It appeared from his history that the cystitis had arisen from a neglected stricture, and that for twelve years micturition had been of undue frequency. The condition had become gradually aggravated, until, for the last four years, he had been unable to follow his employment, and latterly health and strength had given way alarmingly. No less than three strictures were found in the course of the channel, and these so difficult to pass, that the idea of employing catheters to wash out the bladder was abandoned. At first he was put under the usual internal treatment for chronic cystitis, such as demulcents and anodynes; then under the alkaline treatment, as suggested by Dr. O. Rees; but neither plan benefited him in the least. He was then ordered a placebo, of which he was to take a table-spoonful in a tumbler of water six times a day. At first a little difficulty was experienced in gulping so great volume of fluid; but in three days he could toss off his glasses without inconvenience. No amendment showed at first; indeed, from the increased frequency of micturition, he appeared more harassed than before. But in the course of a week a sensible improvement had taken place, and the amount of liquid was raised in the course of a fortnight by gradual steps to four quarts a day, especial care being taken that it was taken in divided doses, fairly distributed over the day and night. In about ten days the urine began to flow acid from the bladder, and the torment of the tenacious plugs of pus ceased from that

time. Micturition also began to grow less frequent, and the health and the strength of the patient sprang up wonderfully. Day by day amendment went on; and the bladder, that had been thought hopelessly contracted and thickened, gradually expanded. In a month he was able to retain the urine an hour; in six weeks he kept it for two or three hours. He was directed to hold the water as long as possible, in order to subject the contracted bladder to a mechanical distension. After the lapse of ten weeks of uninterrupted perseverance in this treatment, he could sleep the night through without once awaking, and micturition occurred not oftener than five or six times a day. The pus also had greatly diminished, but had not altogether disappeared. He left the Infirmary and went to his work. About three months after he re-appeared among my out-patients, afflicted with bronchitis. He stated that he had had a slight relapse about a month after leaving the Infirmary, and that the desire to make water again grew frequent. But he was now his own physician; he recurred to the potation treatment, and thereby speedily restored himself to comfort. Since then he has made a habit of taking several glasses of water in the course of the day, and a glass before going to bed. Under such a regimen he continues to enjoy total immunity from his old complaint.]

It also makes us reflect that the exhalation of water by the skin and lungs can scarcely be held to have the express purpose of *aiding* the kidneys in ridding the system of water, for the healthy kidneys require no such aid; but rather, that both the pulmonary and cutaneous surfaces require to be bathed in aqueous vapor for their own purposes, and that the loss of water by these channels is an incidental circumstance. No amount of potation, if other circumstances be unaltered, will cause sweating. The kidneys are the true regulators of the aqueousness of the blood, and they separate water at a rate precisely conformable to its concentration.

Lastly, is there not much reason to doubt whether our attempts to "stimulate the kidneys to increased activity," as it is called, for the removal of collections of fluid in ovarian cysts, and in the dropsy of hepatic and cardiac disease, are not necessarily vain, and based on a false physiological notion? Is it not greatly more probable, nay certain, that in such cases the difficulty lies in causing the effused fluid to be absorbed into the channels of the circulation, rather than in providing an escape for it when it has passed into the blood?

Density.—The specific gravity of the urine is notoriously subject to great oscillation; and, in a general way, it may be said to vary inversely as the quantity. It has been usual

to consider the density of the collected urine of the twenty-four hours as the mean density. Prout and Bird estimate it at 1020; Becquerel, at 1019 for men, and 1015 for women; Dr. Routh, at 1021; and in fifty-three observations made by myself, the mean density of the twenty-four hours' urine was 1017.

But an estimate on the twenty-four hours' urine does not, as I believe, correctly represent the true mean density of the urine. The correct mean is *the mean as it flows from the kidneys*. The watery urines are always very abundant, while the concentrated ones are very scanty; and when they are put together, the density of the mixture is a far lower figure than the *average hourly density* during the period of secretion. Hence all estimates of density obtained in this fashion are considerably below the true mean. To make plain the difference between the two modes of computing, I will take an example: An individual secreted, between eleven and twelve one evening, six ounces of a watery urine. He then retired to rest, and, after sleeping until eight, passed six ounces more, being the product of eight hours. The first six ounces had a density of only 1006; the second six ounces was concentrated, and had a density of 1030. On mixing them, a mean density of 1018 was obtained. Now, was this the real mean density for this nine hours' flow? Evidently not. The concentrated urine had flowed for eight hours, and the watery urine only for one hour. The more correct mean for these nine hours is $\frac{1030 \times 8 + 1006}{9} = 1027.30$, which is the true *hourly average*.

The most rapid changes in the density of the urine are registered with sufficient accuracy, as a rule, if taken every hour; and there are periods, as in fasting and sleep, when the density varies but slightly for many hours successively; so that an hourly average approaches very nearly the true mean, which is represented by the mathematical formula, $d = \frac{d^1 \times d^2 \times \&c. \dots dm}{m}$, and which becomes the absolutely true expression when m is taken as infinity.

I have already stated, in speaking of the hourly flow of the urine, that any considerable excess of water above the wants of the system is very rapidly expelled, and the ordinary rate of secretion restored. So with the specific gravity, it may descend to 1005, 1002, and even 1001, but only for an hour or so; and it requires *repeated* potations to keep it continuously at a low level. After breakfast the density fell steadily

until noon; then it rose again, and continued to rise until dinner. The extent of the fall varied from five to eight degrees. The same thing occurred after dinner; but with this difference, that the depression reached its lowest point at the second hour, during the sudden flow of which I have spoken. The density continued to range from 1018 to 1022 during the post-prandial period; and then, if no fluids were taken, it began to ascend, and continued to ascend until next morning, averaging from 1024 to 1030. If tea was taken in the evening, the density remained low to a late hour.

The highest numbers were always found at periods the most distant from meals,—that is, during the night and before breakfast. At these times the density usually oscillated between 1026 and 1030; on one occasion it mounted up to 1036. The lowest density recorded was 1000·60. Densities ranging from 1004 to 1007 occurred frequently after dinner; but the urine never continued for two hours continuously in so watery a condition, except from repeated potations.

3. *The Solid Constituents.*—The solid matters were not estimated by a direct method, but by calculation from the density, according to Christison's formula. It is not pretended that the numbers thus obtained represent with accuracy the absolute amounts; but, as relative values, they may be fairly assumed as near the truth. The results obtained present great uniformity, notwithstanding the avowedly uncertain calculation on which they are based; and the conclusion which they warrant is indicated with great distinctness.

The quantity of solid urinary matter—or what, for brevity, may be called SOLID URINE—varied considerably at different hours of the day; and the variations appeared to take place with great regularity, and to have had direct relation to the times of the meals, and also to the conditions of sleeping and waking. It was found that the hourly discharge of solid urine increased shortly after taking food in a very marked manner; and that after prolonged fasting it fell off in an equally remarkable degree; and that during sleep it sank to a considerably lower point still.

The following table exhibits the mean hourly discharge of solid urine at different periods of the day for seven days. The numbers indicate grains, and constitute the mean of the seven corresponding numbers obtained on the different days. All the days were consecutive except one:

Time of Day.	Solid Urine discharged per hour, in grains.	Diet and Regimen.
7-8 A. M.	19.55	Breakfast at eight: coffee or tea, with meat and bread and butter.
8- 9 A. M.	29.27	
9-10 ...	39.22	
10-11 ...	44.34	
11-12 ...	45.24	
12- 2 P. M.	41.43	Dinner at two: meat, potatoes, bread, cheese, water.
2- 3 P. M.	38.69	
3- 4 ...	38.79	(No solid food of any sort taken after dinner.)
4- 5 ...	41.21	
5- 6 ...	41.09	
6- 7 ...	49.01	
7- 9 ...	47.44	
9-11 ...	37.66	Hours of sleep.
11- 1 A. M.	28.63	
1- 7 ...	15.53	
7- 8 ...	17.75	

It is seen, from this table, that the hourly excretion of solid urine began to increase between eight and nine (breakfast being at eight, and lasting about fifteen minutes), and continued to increase rapidly until eleven. It remained nearly stationary till noon, and then began to fall, and continued to fall until dinner, and for an hour after that meal. At the end of the second hour after dinner there was usually, but not always, a slight rise; during the third hour there was a decided rise, which went on increasing up to the fifth or sixth hours, when it reached the culminating point. From that time it fell gradually till bed-time, and then sank to the lowest point during the hours of sleep.

In addition to these seven days, hourly observations on the state of the urine were made on twenty-five other days. On some of these, ordinary mixed food was used; on others, the diet was purely vegetable or purely animal; but in all of them the same procession of numbers was observed, but the exact times of increase and decrease did not always correspond. Sometimes the increase followed rapidly on a meal, and was soon over; at other times it was postponed an hour or two, or it persisted longer than usual, or culminated later. Besides these differences, irregularities were occasionally encountered, especially in the twenty-five days to which allusion

has last been made. These arose partly from the use of the hydrometer in taking the densities,—a proceeding evidently inferior in accuracy to the bottle, which was exclusively used in the experiments recorded in the table; partly also, undoubtedly, from errors of observation, faulty record or faulty calculation, which it was impossible altogether to avoid with such a multiplicity of details. But these irregularities are quite unimportant beside the overwhelming majority of concurrent observations.

Now, what does this increase of the solids after meals indicate? It evidently marks the arrival of the digested food in the channels of the circulation. We see reflected in the urine the progress of absorption—first the small beginning, then the increase, and then the full tide, followed by a gradual ebb, as the remnants of the food are slowly taken up from the alimentary canal.

We also see that the vegetative functions share to some extent with the animal in the repose of sleep. The mean hourly discharge of solid urine during the hours of waking, on the seven days of the table, was 33.14 grains, while the average of sleep was 15.53 grains, or less than one-half. This difference, however, must not be wholly attributed to the state of sleep, inasmuch as, under the arrangement of meals in this series of experiments, the period of sleep was also a time of fasting. A more correct estimate of the effect of sleep alone is obtained by comparing the urine secreted in that state with the fasting urine of the waking state. Let us take the two hours before retiring to rest and the hour before breakfast, and we shall find the mean hourly discharge of solid urine in these three hours to have been 23.59 grains, which is about a third more than the average of the sleeping hours.

I found, like Lehmann, that more solid urine was passed daily while living on animal diet, than with a diet of mixed or of vegetable food.

CHRONICLE OF MEDICAL SCIENCE.

MEDICAL PATHOLOGY AND THERAPEUTICS.

1. *Carbonate of Lithia in Gout.* (From Boston Journal.)

Experience has taught that, in the great majority of cases, new remedies fail to answer the expectations, not only of those who first advocate their use, but still less of others who have no personal interest in their success. Yet, we are bound to lend an unprejudiced ear to any suggestion which comes from one whose name is associated with honest and successful labor in the investigation of disease.

These considerations lead us to call attention to the use of a new remedy proposed by Dr. Garrod, in his work on Gout and Rheumatic Gout, a notice of which we find in the *Lancet* for December 24, 1859. As the author's views of the pathology of the disease have an important bearing upon the treatment, we give some of them here. He says, "there can be no doubt that the essential component in gout deposits is urate of soda, which always assumes a crystalline form." This he considers a pathognomonic lesion, as it is not noticed after rheumatic or any other inflammation, and was invariably found in the numerous examinations of patients who had had the disease in all its forms. In continuation, he says:

"Other matters are, indeed, often present, in varying quantities, derived from the tissue in which the deposition has taken place; but the large amount of phosphate of lime which is occasionally met with, is probably derived from secondary deposition, from the urate of soda acting as a foreign body, and producing ordinary inflammation; and thus, as in the case of the formation of cretaceous tubercles in the lungs and elsewhere, giving rise to phosphatic exudation, which must be regarded, not as related to the disease as gout, but as the result of common inflammation only."

In connection with this, the results of Dr. Garrod's analysis of the blood, as given by the reviewer, are interesting, showing, as they do, that the—

"Healthy blood contains the merest trace of uric acid or urea, so small as to be in general undiscoverable, except by the most minute and searching chemical examination, and not always then.

"That, in gout, the blood is invariably rich in uric acid, which exists in the state of urate of soda, and can be separated from it, either in the form of the crystalline salt in acicular needles, or as rhombic crystals of uric acid.

"That, in acute rheumatism, the blood is free from uric acid, or at least contains no more than in health.

"That the serum obtained by the action of an ordinary blister yields uric acid when the blood is rich in this principle, except when the blister is applied to a surface affected with gouty inflammation.

"That the perspiration seldom contains uric acid; but that, in gout, oxalate of lime may be crystallized from it, as also from the blood."

"The urine," we are told, "in the earlier stages of gout is scanty, and the uric acid, measured by the twenty-four hours' excretion, also diminished; that this acid is thrown out in much larger quantities as the disease is passing off, and that then amounts even far above the patient's daily average may be excreted."

In the chronic stage, the quantity of uric acid excreted becomes still smaller.

The treatment which the author considers the most advisable is the following:

"The diet should be very light, and chiefly amylaceous; diluents freely used, but no alcoholic stimulants allowed, unless in exceptional cases. The medicinal treatment should consist in the administration of some simple alkaline saline, combined with a moderate dose of colchicum; if necessary, purgatives may be given, selected according to the habit and condition of the patient. In the majority of cases this will be found to be all that is necessary; but in some instances certain modifications may be essential: for example, if there be plethora, the question of the abstraction of a few ounces of blood may possibly arise; and, on the other hand, if the vital powers are at a low ebb, and great vascular and nervous depression exists, ammonia, in the form of the sesquicarbonate, may be desirable, in addition to, or as a substitute for, other salines; at the same time, colchicum should be altogether omitted, or used with the greatest caution. The only application required, in the majority of cases, is cotton wool covered lightly with oiled silk, which forms a protection to the joint;

but now and then an anodyne may be advantageously used, and a small blister is occasionally of service."

In chronic forms of gout, Dr. Garrod considers that the following are the indications necessary to be fulfilled:

"First, to treat the chronic forms of gout by less heroic means than those employed in the acute disorder.

"Secondly, to render the blood pure by augmenting the various secreting functions, more especially of the kidneys and skin.

"Thirdly, to restore the power of the digestive organs, which are usually much impaired in chronic gout.

"Fourthly, to attend to the local mischief which the long-continued gouty inflammation induces in the articular structure.

"And lastly, to carefully regulate the diet, and pay proper attention to regimenal means."

In conclusion, he proposes, as a new remedy, the carbonate of lithia, which possesses a very remarkable property, "that of forming the most soluble salt of uric acid known." As this is rare, we give the following facts concerning it, for which we are indebted to Mr. Blackmore. Lithium exists only in a few minerals, the most common of which are spodumene, found at Killiney, near Dublin, Ireland, and lepidolite, a Swedish mineral. This metalloid is white, like sodium, and becomes oxydized immediately on exposure to the air. The mineral waters of Pyrmont, in Germany, contain, in 16 ounces, 0.0030 grains of carbonate of lithia; those of Mariensbad, 0.0675 in the same quantity; those of Aachen, 0.0006; and those of Winterbach, 0.0030 of sulphate of lithia. These springs have, for many years, been regarded as peculiarly efficacious in this class of affections.

2. *Discussion on the Consequences of Swallowing the Nickel Cent.* New York Pathological Society.

Dr. Dalton next presented a penny that was swallowed by a child four years of age, the week before last, on Wednesday morning, about 11½ o'clock. The penny was perfectly bright when first passed, it being a new one. The child received no treatment more than one or two doses of castor-oil, which were administered by the parents, and which operated moderately. After the second day no medicine was given; and on the third day the coin was passed, the little patient suffering from no unpleasant symptoms whatever, before or after. Dr. D. inquired as to the composition of the new cent, and was told that it was

nickel and copper, in the proportion of one part of the former to three of the latter.

Dr. Clark knew of two instances in which the new penny had been swallowed. On a Sunday afternoon a doctor, said he, came to me and said that he had given his child one of those new pennies, and that it had been swallowed immediately. He asked me what was to be done. I told him wait, and let us see what nickel will do. I looked into the chemical dictionaries, and consulted authorities, but all that I could find was that the nitrate of nickel was poisonous. As to the copper, that had been swallowed so many times, that I had no apprehension about it. I therefore told him that he had better envelop it in sweet-oil and let it run. He did so, and the next day he came to me and said that the coin had gone through in the course of the night. The very afternoon of that day, Dr. James R. Wood met me and said that a patient of his, a little child, had swallowed one of the new pennies. I acquainted him with the results of my investigations in regard to the nitrate of nickel, related to him the case I had just seen, and told him to do the same as the other doctor. I met Dr. Wood shortly after, and found that the penny had passed the next day. In neither of the instances was the penny much changed in appearance. So I take it, when the foreign body is not retained any unusual time, there is nothing to be feared. In answer to Dr. Dalton, he stated that in both instances the passage was made in less than twenty-four hours.

Dr. Conant referred to a little patient of his, who had swallowed one of the nickel cents, and, during two and a half days that it remained in the intestinal canal, there was a very severe diarrhoea, which, however, ceased soon after the coin was expelled. The metal in that case was found to be slightly discolored.

Dr. Elliott referred to two cases that came under his notice. He was called to the first on a Sunday evening, and, at the urgent solicitation of the friends, gave an emetic, but with no benefit. The body was passed on the Wednesday following, three days after it was swallowed. He then gave such articles of diet as he thought would produce large discharges from the bowels, such as potatoes, mush and milk, &c. In the second case, he ordered no medicine, only such articles of food as would produce large stools, and with a like result as in the former case. He learned that the coin was composed of nickel and copper. In consulting authorities he found that the former metal was used as a tonic, but could not find any notice of its having poisonous properties.

Dr. Sayre in that connection referred to a case he had under

charge, of a child who had swallowed a glass marble four days before, and it not yet having made its appearance in the stools, he was a little apprehensive of the result, whether it could pass the ileo-cæcal valve as a flat piece of metal would do.

Dr. Dalton did not say why there should be any difficulty.

Dr. Conant remarked that the marble had the advantage of peristaltic action behind, and had only to push itself past the folds of the valve, which were nothing more than duplications of the mucous membrane. He knew of a patient that swallowed a leaden bullet, that went through in twenty-four hours.

3. *Non-appearance of the Eruption in Confluent Smallpox in parts to which Mustard was applied.* (From Boston Journal.)

The following note from Dr. Lenardson, of Yellow Springs, Ohio, will be read with interest. He remarks: "In a recent case of smallpox, in the incipient stage, with high fever, before the eruption made its appearance, I ordered a mustard cataplasm alternately to the back of the neck, pit of the stomach, and the small of the back, as a counter-irritant, to relieve the distress of the patient. It proved a preventive of the eruption in those localities, although it was a well-marked case of confluent smallpox. Perhaps I should not say it proved a preventive, as this is the only case in which I have used it, but such was the fact. There was no eruption where the cataplasm had been applied. The cause of its non-appearance may be ascertained by future experiments, and I wish to call the attention of the profession to these facts or phenomena. I have no theory to offer, and trust that physicians in our large cities, as Boston and New York, where cases of smallpox are common and frequent, will test the matter, and prove whether the simple application referred to will prevent the eruption, and consequently the pitting so much to be dreaded on the human face, especially of ladies. If it will, the discovery will be of some importance, for, on its appearance, the patient's face and neck could be treated with this simple remedy, and thus the disagreeable and mortifying effects of the disease be prevented."

4. *The External Application of Mustard in Variolous Disease; its Effect upon the Eruption.*

Messrs. Editors: In your Journal of the 5th instant, you have a note from H. Lenardson, M. D., stating the "non-

appearance of the eruption in confluent smallpox in parts to which mustard was applied." Dr. L. very wisely seeks to know whether this observation accords with that of others. Within the last month I saw one case in which there was a marked contrast to that reported by Dr. L. A lady, past 70 years of age, was affected with *varioid* after several days of much discomfort. During those days she used a mustard cataplasm very freely on the upper half of the abdomen, and this part was left much discolored. When the eruption took place, the part thus discolored had on it many more pocks than any other part of equal extent on the head, trunk or extremities. This case was seen, and the peculiarity as to the eruption noted, by Dr. H. J. Bigelow, as well as by myself.—JAMES JACKSON, *Hamilton Place, April 7th, 1860.*

✓ 5. *M. Trousseau's Opium and Belladonna Cataplasm in Chronic Arthritis.*

This cataplasm has been found of remarkable efficacy in cases of arthritis, simple or puerperal, which, passing into the chronic state, not infrequently gives rise to white swelling. In order to prepare it, let 750 parts of bread and 100 parts of spirit of camphor be taken. The bread broken in pieces must be thoroughly soaked in water, strongly squeezed and placed in a small saucepan in a water-bath, and then the spirit of camphor is to be gradually added. It must be so managed that the whole remaining perfectly homogeneous, retains the form of the vessel even when this is reversed. This poultice is to be spread on a large piece of rag, which is broader than it is long, and upon this is to be applied the following mixture: Extract of belladonna, 10 parts; extract of opium, 5 parts; and powdered camphor, 10 parts. The two extracts must be rendered semi-liquid with distilled water, the camphor then being incorporated. This mixture is to be spread as equally as possible over the cataplasm, leaving a little more in the middle. The edges are smeared with glycerine to prevent sticking. This is moulded on to the joint, and covered first with oiled silk, and then wet with a long flannel roller. It should be changed every week. The leg should be extended on a splint.

4. *Hydrochloric Acid in Smallpox.*

WM. McDONALD, L.R.C.P. and L.R.C.S. Edin., recommends, in the London *Lancet*, the hydrochloric acid in both

the external and internal treatment of smallpox. It allays, he says, the prickling pain so distressing in some cases, reduces the tumefaction, the vesicle matures earlier, and desquamation takes place sooner, leaving the skin smoother and purer than by any other plan he has tried. Internally, one drachm of the commercial acid to twelve ounces of water : dose, a teaspoonful in a glass of water ; to be sipped often. Externally, he applies it to the face, hands and feet—the parts which suffer most from irritation : for the face, half a drachm to, say, ten ounces of water ; apply with a hair pencil, twice or thrice daily, using occasionally the mercurial liniment or cold cream.

7. *Medical Excerpts.*

Prevention of the Unpleasant Taste of Balsam of Copaiva. Dr. Landerer observes that by keeping, the balsam undergoes some change, conferring upon it a taste which is very repulsive to the patient. While, too, some sorts of balsam are of light yellow color, possessing a mild aromatic odor and taste, and swim when dropped on water, there are other kinds which are brown in color, much less agreeable to the smell, are of a sharp, irritating taste, and often sink when dropped in water. He is inclined to believe that these changes depend upon the formation of a resinous acid. At all events, the addition of magnesia or prepared oyster-shell to old, thick, brown balsam, very much diminishes the disagreeableness of its taste. The addition of syrup is a still further improvement ; and if immediately after taking the balsam, a cup of well-sweetened coffee be drank, the disagreeable after-taste will scarcely be perceived.—*Bachner's Repertorium.*

Employment of Sambucus Nigra in Dropsy.—Mr. Reyssie, a Belgian practitioner, states that he has long employed the juice of the root of the sambucus as an excellent purgative in dropsy. The bark of the fresh root must be detached by scraping, and the juice is extracted from the scrapings by pressure. The dose is a tea-spoonful for an ordinary purgative ; but as it does not cause colic or any other inconvenience, the quantity may, in the case of dropsy, be increased to a table-spoonful, which will often induce from twenty to thirty stools. It is a curious fact, that the process of boiling, as in the preparation of a syrup, converts this purgative into a diuretic, which may also be of great use in dropsy.—*Revue Méd.*

Borax in Diptheritis.—M. Leriche, having derived great advantage from the employment of large doses of borax in

croup and the various pultaceous affections of the buccal mucous membrane, determined upon giving it in diphtheritis, which was prevailing in his locality. He relates two cases, occurring in adults wherein its employment was quite satisfactory, in one of which twenty-six drachms were given in four days, and in the other fifty drachms in six days.—*Ibid*, p. 535.

Vaccination in Pertussis.—Dr. Otsolig states that the results of this treatment, when tried in the Hospitals of the province of Kowno, in Russia, were: 1. Vaccination performed in the subjects of pertussis pursued its regular course. 2. It sometimes exerted an evidently beneficial effect upon the disease, shortening its course and diminishing the severity of the attacks. 3. In many cases it exerted no effect whatever. [In some cases the internal use of tannin—gr. vj. in the twenty-four hours—in combination with infusion of senna, was found of marked utility.]—*Ibid*, p. 407.

Coffee as a Diuretic.—So long ago as 1725 Zwinger recommended coffee as a diuretic in dropsy; and the recent researches of Lehman have shown that in persons making use of this substance the proportion of water is increased in the urine, while the urea, phosphoric acid, and the solid parts in general undergo some diminution. These latter thus remaining within the organism in a larger proportion, contribute to nutrition. When coffee is given as a diuretic it should be served without milk, as this last gives rise to flatulence, and in some persons acts as a purgative.—*Revue Médicale*, Dec., p. 753.

Phosphorus in Paralysis of the Muscles of the Eye.—M. Taignot, in localized paralysis of the muscles of the eye, employs, with success, the following liniment: Walnut oil, 3xxv.; naptha, 3xij.; phosphorus, gr. iij. Frictions are performed in the evening by means of a piece of flannel, this remaining also fastened around the forehead all night. M. Taignot also administers the following emulsion internally: Oil of almonds, 3ij.ss.; phosphorus, gr. j.ss.; gum syrup, 3xxij.ss.; powdered gum, 3½. To be well shaken when administered, the dose being at first one, and then two and three tea-spoonfuls per diem.—*Bull. de Thérap*, tome lvii.

SURGICAL PATHOLOGY AND OPERATIONS.

1. *Multilocular Ovarian Cyst—Ovariectomy—Cure.* (Under the care of Mr. SPENCER WELLS.)

E. A., single, age 23, admitted January 4, 1860.

History.—Had worked as a laundress for six years. Between three and four years ago first suffered from pain above the umbilicus, especially when employed at hard work. This lasted three weeks, and then disappeared without treatment. Three years ago first noticed an enlargement in the upper part of the abdomen, more particularly on the right side; and this continued to increase. Unable to follow her occupation as a laundress, she became a dress-maker, and continued at this employment until the end of 1858. Six months before this she noticed diminished excretion of urine; and, at times, hardly passed any. About the same time she suffered very much from pain in the back and loins. This continued up to August, 1858—at times being very intense; but afterwards was not so severe, except just at the catamenial period. The catamenia have been regular, but generally last seven days—being absent three weeks. She was first under homœopaths for six months, without benefit. She then went to the Torquay Infirmary, and remained there eighteen weeks. She was then sent to St. George's Hospital, and remained six weeks under Mr. Cæsar Hawkins. She left because her desire to have the tumor removed was not complied with; and she was admitted to the Samaritan Hospital, under Mr. Spencer Wells, on June 22, 1859. She was at this time as large as a woman far advanced in pregnancy, the whole abdomen being occupied by a large fluctuating tumor. Looking to the history of the case, and the fact that no line of demarcation could be made out between the liver and the upper part of the tumor, it was decided not to consent to her earnest desire to have the tumor removed, until the diagnosis was verified by a preliminary tapping. Mr. Wells accordingly tapped her, and removed eleven pounds of a pale, amber-colored fluid. The cyst and liver were then found to be distinctly separated, and several groups of smaller cysts could be felt. On this account it was determined not to inject iodine. She was relieved by the tapping, but suffered a good deal of pain—apparently from rolling of the cyst as she turned. This passed off, and she returned

into the country on the 13th of July, with directions to come to town when the cyst filled again.

She was re-admitted on November 8, and ovariectomy was again postponed on account of an attack of circumscribed peritonitis. A good deal of lymph seemed to have been effused, for there was a very loud friction-sound beneath the right false ribs. She was tapped the second time on November 18; was relieved by the tapping, and went to the country on the 30th.

Her general health improved, and she came up for the third time in January, beginning to suffer much pain from distension, having filled fast. It was decided to perform ovariectomy at once; but several accidental circumstances—foggy days, appearance of catamenia, etc.—led to delay. The circumference at umbilicus was forty-one inches; distance between ensiform cartilage and symphysis pubis, eighteen inches; the umbilicus being exactly midway.

Operation.—January 21.—Present: the Hospital Staff, Mr. Bowman, and Mr. Leggatt. Dr. Priestly administered chloroform. Mr. Wells made an incision of about five inches along the linea alba. The upper end was about two inches below the umbilicus, the lower end about the same distance above the symphysis pubis. Having exposed the surface of the cyst, and separated a few slight adhesions to a piece of omentum, Mr. Wells passed his hand rapidly over the surface of the tumor, and found it was quite free from adhesion. A full-sized trocar was then introduced, and a large cyst drawn outwards as it was emptied. Several other cysts were then successively tapped, emptied, and drawn out; and, lastly, some semi-solid rounded growths of small cysts aggregated together were drawn outwards one after another, until the whole tumor was thus withdrawn from the peritoneal cavity. A broad peduncle was secured by a clamp, the tumor cut away, and the wound united by hare-lip pins passed through the peritoneum. It then appeared that the clamp lying across the wound exerted a good deal of traction on the uterus. To remedy this, Mr. Wells pierced the peduncle close behind the clamp and tied it with strong twine in three portions, removing the clamp, allowing the peduncle to sink until the ligature was on a level with the peritoneal edge of the wound, and fixing it there by transfixing it with a hare-lip pin which also passed through both sides of the wound. After the removal of the clamp a large artery bled on the cut surface of the peduncle, and was tied. The cutaneous edges of the wound were closed by wire sutures. The whole operation, including the administration of chloroform, scarcely exceeded half-an-hour. The fluid removed

weighed twenty-two pounds; the cysts, three pounds; total, twenty-five pounds.

The after-treatment consisted at first of hot linseed poultices all over the abdomen, occasional injections of twenty minims of laudanum in a little water, and the use of the catheter. Peritonitis seemed threatening about twenty hours after operation, as she was hot and thirsty, complained of some pain, and the pulse got up to 120, and increased to 136; but all this subsided without further treatment than very hot poultices, and there was from this time a steady and rapid recovery. She said that she had suffered far more before the operation from the distension than she had done since. Champagne was given on the third day, beef-tea, brandy, and soda-water. Two hare-lip pins were removed and nearly the whole of the slough of the peduncle. On the fourth day the two remaining pins were removed, and the ligatures came away spontaneously. The pulse had fallen to 96. On the sixth day the bowels acted naturally. The wound having united perfectly, except where the peduncle had passed, two superficial sutures were removed, and the others two days afterwards. She left her bed on February 7, exactly a fortnight after operation. The wound was then completely healed, and she was looking quite well. She remained a fortnight longer to recover strength for the long railway journey to Torquay, walking up and down stairs, sitting up to needle work, etc., and left in excellent health and spirits on the 22nd inst.—just four weeks after operation.—*Medical Times and Gazette*.

2. *Statistical Resume of Sixty-one Cases of Ovariectomy Undertaken or Executed in Germany.* By M. G. SIMON. (Translated from the *Gazette Hebdomadaire*, No. 3, 1860, for the *Boston Medical and Surgical Journal*, by O. D. Palmer, M.D., Pa.)

Of 61 females, in whom the operation was completed, or only commenced, 44 succumbed within a short time after the operation.

In 5 cases, the operation did not procure any amelioration, or but merely a temporary benefit. There were but 12 cures.

The operation could be terminated only in 44 of these cases. Out of this number, there were 32 deaths by the operation alone. One woman, who had removed from her, a multilocular and colloid cyst, died eight months later, with cancerous productions of the pancreas, the lymphatic ganglions, and the lungs. A radical cure was effected in 11 cases.

The operation remained incomplected in 15 cases, for the reason that the tumors had contracted intimate adhesions with the neighboring parts; 11 of these patients died immediately. In the others, the operation remained without advantage, or produced but a temporary amelioration.

In 2 cases there had been a mistake in the diagnosis; of these there was 1 death and 1 recovery.

The statistics published anteriorly were less disastrous. According to the figures of M. Fröhlich, the operation of ovariectomy would be more grave than the Cæsarean operation, for which the mortality is 63 out of 100, according to Kaiser, and 2 out of 3, following other authors. (*Scanzani's beiträge zur Geburtshunde.*)

We had published in 1856 (page 788, *Gaz. Heb.*), a *relevé* of M. Fock, who analyzed a more considerable number of ovariectomies, than this of M. Simon, who reports a mortality of 120 from 292, *plus* 52 relapses. It is apparently shown that ovariectomy had afforded its most deplorable results in Germany; but there is reason for believing that this difference is caused by some accidental circumstance, such, for example, as giving publicity equally to failure and success. However this may be, the last English summaries are far from being so terrifying as this of M. Simon, and Dr. Barnes has not feared even to advance, recently, to a medical society of London, that we are not only authorized to practise ovariectomy, but that it is a serious duty to recommend an operation capable, using his expression, of saving the lives of 200 patients out of 300, affected with encysted dropsy of the ovary, and to refuse the afflicted this benefit would be to desert their cause.—(*Lancet*, July, 1858.) It is proper to remark, that the *relevé* of Dr. Barnes only contains 103 cases (*Statistics of R. Lee, and 21 cases published since*), and to which it is necessary to add, precisely, these 61 cases of M. Simon. Dr. Barnes, moreover, was not acquainted with the statistics of M. Fock, the most considerable of all, and which remain very far from 200 cures out of 300.

3. *New Mode of Relieving Retention of Urine.* By Mr. PARKER, Surgeon to the Queen's Hospital, Birmingham. (*British Medical Journal*, May 2, 1859.)

"Within the last few days," says Mr. Parker, "I have succeeded in two separate instances, in relieving the retention of urine in the following manner: A gentleman lately entered my consultation room in great pain from retention of urine. He

had not passed water for many hours; the bladder was much distended. He stated that ineffectual efforts had been made to pass a catheter, during which operations he had lost a considerable quantity of blood. I attempted to relieve him by the catheter, but failed to do so; I tried instruments of various sizes and various curves, but could not succeed in passing one into the bladder. I then took a No. 2 wax bougie, and inserted a small portion of potassa fusa into the end of it, after the manner proposed by Mr. Whateley, and practised by Mr. Wade in the treatment of permanent stricture of the urethra. I well moulded the wax over all but the extreme point of the caustic, and passed it rapidly down to the point of obstruction; by pressing against this for a short time it yielded, and I had the satisfaction of finding the bougie easily enter the bladder. I directed the patient to strain as I withdrew the instrument; a stream of urine followed, and the bladder was emptied. The retention did not again occur, and very little irritation accompanied or followed the proceeding. On the next day the patient made water freely, but in a small stream.

"The second case was very similar. The patient had traveled some distance by rail. The bladder was much distended, the symptoms urgent, and a catheter could not be made to enter the bladder. A small wax bougie was armed as in the last case, passed down to the stricture, and firmly pressed against it. It yielded very shortly; the instrument entered the bladder, and a stream of urine followed its withdrawal. This patient had a second attack of retention two days afterwards, which was relieved in the same manner.

"A modification of this plan might be attempted by inserting a small piece of potassa fusa into the extreme point of a small gum-elastic catheter, and using it without the stilette. I am sanguine enough to hope that many cases of retention might be easily and quickly relieved by the simple means I have suggested, and more formidable and dangerous operations thus frequently avoided."

5. Surgical Excerpts.

Creosote in Nævus.—Dr. Bujalsky relates a case of nævus occurring on the temple of a new-born infant, which, in the course of eight months, had attained a considerable size, and threatened to burst. The general opinion was that an operation was required; but he determined first to try the effect of pencilling the entire surface of the nævus, as well as some lines beyond its basis, twice a day with creosote. At the end of six weeks the tumor had become somewhat paler, and more flaccid,

and the creosote having been continued for three months, it entirely disappeared.—*Med. Zeit. Russlands.*

Dental Cream.—Under this title, M. Vautier, *Médecin-Dentiste* of Paris, describes a composition which he says is of very great utility in facilitating cutting the teeth. It consists of gum, sugar and honey, equal parts of each, with *q. s.* of lime water. This is to be rubbed for several minutes three or four times a day, into the portion of the gum about to be penetrated. The gum becomes softened and thinned, and the tooth is much more easily cut.—*Gaz. des. Hôp.*

Cauterization of the Ear for Sciatica.—Dr. E. H. Sholl, of Warsaw, Ala., writes as follows: In the New York Journal of Medicine, September, 1850, is an extract from a French journal on an article of M. Malgaigne, in reference to the cauterization of the lobe of the ear, opposite to the affected side, for the cure of sciatica. I tried it in one case, using a red-hot nail, with instant relief, which continued for three months, returning then, though in a milder form. It readily yielded to a second cauterization, and did not again return while the case was under my observation.

Collyrium in the Ophthalmia of New-born Infants.—M. Foucher employs the following collyrium: Glycerine, 3vij.; nit. of silver, gr. 1½ ad gr. ij. The eye is first washed by injecting a very weak solution of chloride of sodium, and then a drop of the above collyrium is deposited on the internal surface of the eyelids by means of a small camel's hair pencil.

Unguentum Glycerini.—Under this title, Prof. Simon, of Berlin, describes an ointment forming a most excellent excipient, composed of five parts of glycerine and one part of amylum. It forms a smooth butter-like substance, free of all smell, exciting no chemical action, and unaffected by temperature. It is to be preferred to similar substances: 1. For its elegance, its freedom from repulsive odor, and its not exciting erythema in irritable skins. 2. It can be kept in large quantities without undergoing change, even when chemically combined with other bodies. 3. Extracts and soluble salts may not merely be mechanically mixed with it, but may be held in a dissolved condition, the absorption being thus much facilitated. 4. As its consistence remains unchanged, it does not extend beyond the parts to which it is applied. 5. It can be removed with great facility.—*Varge's Zeitschrift*, Dec., p. 412.

ENDEMIOLOGY.

An Inaugural Dissertation on Goitre, for the Degree of Doctor of Medicine in the University of Louisville. By N. W. BROWN, of Mexico.

I propose to show from eight years of observation in the goitrous districts of Northern Mexico, that goitre is produced by the use of water impregnated with minerals.

In these goitrous districts which I shall now describe, we meet with iron, copper, lead, sulphur and alum, in their many different forms and combinations existing in nature. In some of these localities the lead and copper may not be present, but the sulphurets and oxides of iron are invariably found, and in abundance.

The rivers Sinaloa and El Fuerte, take their rise in the Sierra Madre some seven or eight thousand feet above the level of the sea, and flow westward to the Pacific. On the tributaries of these streams are situated many mining towns and villages, whose inhabitants are affected with goitre. These towns are situated at different heights: from three hundred to two thousand feet above the sea; and are generally in the deep canons, or narrow glens, surrounded by steep, high mountains. The climate varies.

In Bacobarila (Gold Placer,) we find about twenty-five per cent. of the females over twelve years of age affected with goitre; males of the same age about five per cent. This town is situated on a creek some four hundred yards from where the creek empties into the river Sinaloa, at an elevation of about five hundred feet above the sea. The town is built on a conglomerate, volcanic rock. The soil in the neighborhood is not more than six inches in depth, with but sparse vegetation. There is no land cultivated in the vicinity of the town; and being two miles distant from the mountains, it is thereby freely exposed to the sun and winds. The climate is remarkably dry—only rains during three or four months of the year. The inhabitants drink of the water from the creek which, in the dry season, sinks in to the gravel and sand, and then it is procured by sinking wells in the bed of the creek. In this gravel are found loose ores of copper, and oxides and sulphurets of iron; and crossing this creek are many small veins of these ores, from which ooze nauseous springs. Thus the creek water

is impregnated with these minerals, even quite perceptible to the taste. A few families of the better class have water brought from the river, which they use, thereby avoiding goitre. The people here were well aware of the properties of the creek water, and informed me that its water caused goitre.

Passing farther up in the mountains we find the town of San Jose de Gracia, situated in a deep gorge, or narrow ravine, at an elevation of some eight hundred feet above the sea, with a fine, dry climate, thermometer never below 40° Fahr., and seldom over 100° in the shade. The water here used is from a creek impregnated with most of the afore-mentioned minerals. We here find about forty per cent. of the females affected, and some five per cent. of the adult males. The rich and poor are affected alike. This town is not exposed to the sun more than seven or eight hours in the day.

Farther up in the mountains, at an elevation of one thousand five hundred feet, we find the celebrated silver mining town of Marclos, situated on a good sized creek surrounded by high, steep mountains. This creek cuts its way through the mountains, and from the tall cliffs trickle many springs of nauseous water leaving incrustations of iron and alum in their paths. The creek, though coming from some distance from the summits of the neighboring mountains, becomes here mixed with these springs and so impregnated with minerals that it causes goitre in a still greater proportion than in the town of San Jose de Gracia.

I could describe many other towns and villages situated on the tributaries of this river, Sinaloa, but they all present us with the like facts.

The river El Fuerte we find some seventy-five or one hundred miles north, and parallel to the river Sinaloa. On it and its branches are many small towns and villages, whose inhabitants are engaged in silver mining. In all of these places that I visited I found goitre. The water used by these people invariably contained minerals.

On the river Urique, a branch of the river El Fuerte, are several small towns in which I found only about fifteen per cent. of adult females affected, while on the smaller streams in the neighborhood which are fed by springs, we find goitre in a much greater proportion. Thus in the town of Bahnarachie, where the water is highly charged with iron, copper and sulphur, this water, which is used by all, is so highly charged with minerals that it causes colic and purging to those who are unaccustomed to its use.

In Jesus Maria, a little town near Bahnarachie, we find about twenty per cent. of adult females affected. The water here

used is from a creek which runs through the town. Near this village, say four hundred yards, is a spring which issues from a hill of lime-stone. This water is used to irrigate a field of sugar cane. In this field I found several poor families residing; they drank of this water, and only one was affected with goitre, a female, and she informed me that she acquired it in Maralos. These families are surrounded by dampness and running water all the year. This water contained lime, but was free from iron and other minerals.

The Indians who pass the summer months cultivating their crops on the level summits of the high mountains, are not affected with goitre, although they descend in the valleys to pass the winter when their mountain homes are covered with snow; but while they are in the valleys the streams are swollen by the melting of the mountain snows, and thus the water is kept pure and comparatively free from minerals. The spring water which contains these minerals is not at this time sufficient to cause any perceptible effect on the bold running creeks; while in the summer months, while raising their crops, they are some seven thousand feet above the level of the sea, and some three thousand feet above the mineral districts, for we seldom find minerals in this part of the Republic over two or three thousand feet altitude. On the summits of these mountains, where these Indians reside, it rains in summer, and they are exposed to much more moist climate than those in the valleys, where vegetation is parched up six months during the warm season. Yet these Indians are not affected with goitre.

It has been asserted that, in Switzerland, those only who resided in the deep glens were effected, and as we ascended the mountains goitre disappeared. This is true also in Northern Mexico, for the simple reason that its cause disappears also as the minerals are seldom found over two thousand feet altitude. While in Chili, where the mountains are much higher than in either country, we find the minerals and mineral waters are never met with over an elevation of four thousand five hundred feet; but in old Peru, or Bolivia, they are found at a greater altitude. Humboldt met with goitre in Bogota at an elevation of six thousand feet.

I shall now describe a town situated in a plain ten miles distant from the mountains, in an exceedingly dry climate, and freely exposed to the sun and winds, in one of the most healthy locations in the State of Sinaloa, where the lemon and pineapple come to maturity, and which differs from any place in England or Switzerland, save that the water is here thoroughly impregnated with the aforementioned minerals. This is the town of Au Corrona, and we here meet with goitre, the water

of this creek coming from the mountains where iron, sulphur and copper are found.

In the sea ports, where the wealthy class use rain water, we never met with goitre in their families, while in the neighboring towns, where minerals are found, there we find the inhabitants more or less affected.

Dr. Bally says: "Bronchocele to me appears to be produced by certain waters which issue from the hollows of rocks, trickle along the cliffs of mountains, or spring from the bowels of the earth. That this is the case, I may instance some fountains in my own country (Department du main au Hammeau du Thent,) the use of whose waters will, in eight or ten days, produce or augment goitrous swellings, as those who avoid the use of these waters are free from goitre or cretinism."

Many such springs as described by Dr. Bally have been pointed out to me, and I invariably found them to contain much mineral.

These two rivers, on emerging from the hills, enter the low, flat country known as the *coast*, and on them are situated many towns and Pueblos, so situated of necessity on account of the scarcity of water, for here there are no springs or creeks during the dry season. These rivers receive their constant supply from the snow and rain in the mountains where there are no minerals, but on their descent they pass through the mining districts, and receive the waters from springs and creeks which are impregnated with minerals, thereby imparting to them their character, be it never so slight. But this water, on reaching the dry, sandy coast, sinks and percolates through the gravel and sand, thereby filtering, as it were, and ridding its waters of any impurities that before it may have held in solution. In these coast towns we meet frequently with goitre, but on inquiry I found that those affected had contracted it in the mountains or on ranches where the water used was procured from deep wells, which water was impregnated with minerals.

Many young women who remove to the coast recover from the goitre without any treatment. I am acquainted with two young ladies who, by visiting the town of Bacobarita, and who remained there for two or three months during the dry season, returned with goitre; one of them recovered without the use of any remedy, the other had to use the iodine.

The food used here on the coast is the same as that used in the mountains. Malaria and intermittents are raging here six months in the year, while in the mountains it is comparatively healthy. They are the same people, with same customs and habits; yet we find goitre endemial in one, and the other free from it. I do not pretend to say that bronchocele does not exist

where there are no minerals, for we see that in many large cities, as in London for example, the disease is frequently met with, such as deformities and swellings of the neck, arising from common various causes; but what I wish understood is, that I have never met with the endemial disease, known in Switzerland as Goitre, and in England as "Derbyshire Neck," and in Mexico as "Buche," where the inhabitants thus affected did not use water impregnated with *minerals* quite perceptibly even to the taste.

Noticing the great disparity between the goitrous females and males, I am inclined to think that one cause arises (independent of physiology) from the fact that the men do not remain constantly at home, but from the nature of their occupations, are wandering over the country, more or less, thereby avoiding the use of the mineral waters to some extent, while the women, who remain at home, are almost continually exposed to them.

I will here add that I met with but few children under twelve years of age who were affected with goitre, and of these the boys were equally as often, if not more frequently, affected than the girls. Those boys affected were generally of a weak, feeble habit.

From these facts, I am satisfied that goitre does not arise from snow-water, rain-water, cold, dampness, miasmatic exhalations, diet, calcareous earth, or intermarriage; but that it is caused by waters which hold in solution combinations of minerals—the oxides and sulphates of iron being here always present.—*Louisville Med. News.*

NECROLOGY.

Died, in Baltimore, on the 25th of March, of Diphtheria, Dr. CHARLES FRICK, Professor of Materia Medica and Therapeutics in the University of Maryland—æt. 37. We have already given some of the details of Prof. Frick's lamented and sudden death. As a further tribute to the memory of our associate in

conducting this journal, we extract a portion of the proceedings of the Medical Profession of his native city, and the theatre of his labors, which was called to express their sorrow at this sad occasion. Dr. Christopher Johnson said :

Mr. President, and Gentlemen of the Medical Profession : In presenting the resolutions prepared at your request for action this evening, your committee beg leave to make a few remarks upon the saddest occasion which has ever brought us together.

It is hardly more than a week since Dr. Charles Frick stood among us in a robust health that promised long continuance ; and a week ago yesterday he joined the throng of mourners who followed to their last resting place the remains of our young and esteemed professional brother, Dr. Berwick B. Smith. Who, then, that looked upon his manly form or watched his vigorous step, could have entertained the fatal suspicion that Death had already sped his poisoned arrow and marked him as a new victim ? Yet even at that time the barb had reached its quarry, and lay rankling in his bosom.

Upon completing the usual course of College instruction, Charles Frick, at the age of sixteen, determined upon embarking at once in an active career ; and accordingly he sought and obtained the position of assistant civil engineer in the service of the Baltimore and Ohio Railroad Company. For years he labored in the field of his duties with an assiduity which met with the fullest approbation : but unable to restrain the impulse which burned within him, he abandoned an avocation which promised him abundant success, entered the office of Dr. John Buckler, as a student of medicine, and matriculated in the University of Maryland in 1843.

It soon became manifest that he had not mistaken the suggestive promptings of his genius, for, after pursuing his studies with a zeal, to which those who were his fellow students can testify, he graduated with distinction in the Medical Department of the University, in the spring of 1845.

But although Dr. Frick now stood before the world in the enviable attitude of one who had merited and received unusual honor in his class, he felt the need of a closer approach to disease than was possible even at the Baltimore infirmary, and longed for the privileged opportunity of applying at the bedside the high principles of Medicine ; of putting to a practical test the accredited doctrines of disease ; of witnessing the varied phenomena exhibited in all the phases of morbid affections ; of rendering diagnosis certain and treatment effectual ; and of cultivating a more familiar acquaintance with the normal and

pathological anatomy of the human frame. Being sensible that the wards of the Baltimore City and County Alms House afforded the desired advantages, he procured his nomination and election as one of the resident students in that Institution, and entered upon his duties soon after the attainment of his degree. Under the guidance of most excellent attending physicians, he made solid and rapid progress in the task he had assigned himself, enjoyed much reputation for faithful and accurate observation and for comprehensive analysis, gained all hearts by his sterling integrity and gentle demeanor; and left the Alms House in 1846, after a little more than a year's residence, followed by the regrets and best wishes of all its inmates.

Being resolved to devote himself entirely to the profession of his choice, Dr. Frick soon associated himself with three of his coteremporaries for the purpose of affording united professional assistance to the poorer classes; and after a brief interval he became one of the four instructors who inaugurated an establishment for private medical teaching, under the title of Maryland Medical Institute. It was in this little institution that his aptitude for imparting information forced itself on the attention of his colleagues and pupils; and at the same time his genial manner so won upon those by whom he was surrounded, that he attached them to him by ties of respectful and most affectionate regard. Upon the closure of the doors of this preparatory school, Dr. Frick applied himself with renewed energy to the practice of his profession; and receiving soon afterwards, in 1849, the appointment of Physician to the Maryland Penitentiary, he found ample occasion for the exercise of his skill and for the application of his extensive knowledge. During the long term of his service as medical officer of this penal establishment, he gave constant proof of his rare ability, contributed largely towards rendering the hospital system more humane, reduced the mortality of the incarcerated, and shortened their average number of hospital days. Nor was his active and well-stored mind at rest upon the past: he gathered a harvest where none had cared to apply the sickle; and besides other valuable contributions, he gave to the world most acceptable and original views upon Diuretics and Renal Pathology, as well as extended and laborious analyses of the Blood and Urine. In fact, he so enlarged the scope of his official duties, as notably to increase the difficulty of their performance by any successor.

Dr. Frick established himself definitely in Baltimore, by contracting a matrimonial alliance in 1854. In the next year, he became one of the Physicians of the Union Protestant

Infirmary; and upon the creation of the Maryland College of Pharmacy, the acquirements and practical talents of Dr. Frick had become so generally recognized, that he was immediately chosen to fill the Professorship of *Materia Medica* in that Institution; and in his new position, he not only affirmed the assurances he had given, but he laid the foundation, by his mastery of the art of lecturing, of his future remarkable success in another and more extensive field of labor.

In the spring of 1857, Dr. Frick made a short trip to Europe, and visited the Hospitals of the English and French Capitals, with serious intention and profitable results; and upon his return, he relaxed none of his energy in the acquisition of knowledge, nor of his devotion to the poor, the sick, or the afflicted, who sought his aid or professional assistance.

In 1858 a vacancy occurred in the faculty of the University of Maryland, whereupon, as the recollection of every one here present will bear us out, all eyes were turned towards Dr. Frick as the man above all others in the medical profession in our city, whose entire fitness for the chair was pre-eminent and undeniable; and when the Faculty, in verification of the universally expressed opinion, elevated him to the Professorship of *Materia Medica* and Therapeutics, most hearty congratulations were offered as well to the new Professor as to his colleagues; and the most confident predictions were uttered as to his success as a Teacher, and the considerable part he was likely to take in extending the usefulness and reputation of the Institution.

Professor Frick opened the session of 1858-59 in a discourse of great elegance; stamped a powerful and individual impress upon the course of Lectures he delivered; and conducted his clinical teaching in so strikingly original, truthful and instructive a manner, as to fill his friends with pride and admiration.

Again he had finished his course, and renewed his attendance in the wards of the Baltimore Infirmary, when a case of pestiferous Diphtheria fell under his care. In vain he exhausted the resources of medicine, which few could so well command—in vain he afforded the last hope that surgical interference could promise—the patient succumbed to the malignity of the disease. Happy had it been for us, if the destroyer had paused here, and arrested his fatal step! but alas! the poisonous exhalation only quitted the quivering and dying frame to fasten with unyielding grasp upon him who had extended his arm to save. From Tuesday to Sunday is a brief period, but in that short time, the fatal work was accomplished; and the hour of noon had hardly sounded on the 25th of March, when our

friend and brother laid down his life. He died, as he had lived, all patience, all courage, all endurance.

If we sadly contemplate the life of Dr. Charles Frick, we find it even, consistent, and noble. As boy, youth, and man, he was true to himself, was brave, generous, compassionate, toilsome, and mindful of others; as a friend he was considerate, faithful and full of the warmest affection; as a physician he was wise, gentle, discreet, and replete with the kindest sympathy; as a teacher he was full of knowledge, ability, and the most earnest resolve to render a good account of his trust. In short, in every relation of his brief existence the exalted character of Dr. Charles Frick shone with untarnished and steady lustre; and he has left behind him a remembrance which we love and honor, and an example that is worthy of all imitation.

EDITORIAL AND MISCELLANEOUS.

FACTS CONNECTED WITH THE DEATH OF PROFESSOR CHAS. FRICK.

A family, consisting of eight persons, including servants, in good circumstances, resided, in a healthy neighborhood, on one of the principal streets of Baltimore. Miss T., æt. 15, one of this family, whose general health was delicate, was first seen by her physicians on the 29th of February. He thus describes the course of her disease:

Commenced by being restless, sleepless, adynamic, and complained of sore throat. Examination showed both tonsils inflamed with follicular ulcerations.

Thursday morning, March 1st.—Insomniac; pulse feeble, 120; cold perspiration; dysphagia; has eaten nothing since Tuesday night. Arches of palate, tonsils, and posterior pharynx presented an erysipelatous flush, with patches of false membrane on posterior pharynx.

Same date, 9 P. M.—Diphtheritic membrane extended to uvula and arches of palate.

Friday, March 2nd, 8 A. M.—Pulse weaker, 140—Insom-

nious; acrid discharge from nares; portions of membrane expelled.

Same date, 2 P. M.—Pulse cannot be counted; tonsils less swollen; membrane covers pharynx; arches of palate, plainly visible in the anterior nares.

Same date, 10 P. M.—Pulse counted 140; responding to cordial and stimulating treatment; very restless and prostrate.

Saturday, March 3d.—Considerable quantities of membrane exfoliated.

Sunday, March 4th.—the same; pulse 140; complains for the first time that the nitrate of silver solution (3j to aquæ 3j) produces pain.

Monday, March 5th.—Membrane comes away more freely; during the day had sickness and faintings.

Tuesday, March 6th.—Seventh day of disease; slept well during the night; pulse 100; expression more composed; commenced and continued to improve.

Summary of Treatment.—General principles cordial and stimulating. Special agents relied upon: Chlor. Potass. grs. xx., every four hours. Comp. Tr. Cinchona, and Muriated Tr. Ferri. m. xxv. every three hours.

Topical Applications.—Arg. Nit. 3j. to aquæ 3j.—gargle of Chlorate of Potass, and afterwards a gargle of Muriatic Acid, 3j. to a pint of water. Wine, ale, and porter, were freely administered. She took in the space of three weeks the essence of 30 lbs. of beef. The Tr. of Iron and Cinchona were continued a week after the disappearance of the membrane—the last vestige of which was seen Thursday, March 15th.

For some time she complained of a stricture across the pharynx, and fluids would return through the nostrils frequently when attempting to swallow. All these inconveniences have now, however, entirely ceased.

Ellen Gibson, negress, æt. 14, apparently of good constitution, was at service in this family. On Monday, March 5th, she washed several handkerchiefs used by Miss T. during her sickness.

Tuesday, March 6th.—She sat in her room about 20 minutes. On Thursday, March the 8th, the tonsils were found inflamed, but no appearance of membrane. Complained that she had felt badly since Monday.

Friday, March 9th.—Pulse 120; skin hot and dry; one tonsil ulcerated. Solid stick Nit. Argent. gave no pain on application; had head-ache and general feeling of depression. Was removed to her mother's house, on Marion st., between Howard and Park, in a badly ventilated locality. The throat

continued to "swell" externally and internally, and she died Thursday, March 15th. She had no medical treatment after returning home, so that her pathological condition must be inferred from the cases which follow, and which were described to be similar in character by those who saw her.

Nancy G., æt. 12, in good health, sister of Ellen, and occupied the same room with her for several days during her sickness, when she went to service in another part of the city, on March the 12th.

Tuesday, March 13th, complained of being sick, and Thursday, 15th, (day of Ellen's death,) returned home, suffering with violent sore throat.

On Saturday, 17th, was seen by a physician, from whom I have the following account:

Her condition was almost that of semi-coma. The throat was enormously swollen externally, with a putrid discharge oozing from the nostrils. The mucous membrane of the palate was swollen, darkly congested and œdematous; the tonsils enlarged, and all the deeper tissues of the back fauces inflamed and congested almost to the extent of closing the aperture of the throat. A sheet of ash-colored membrane, closely adhering, extended from the roof of the mouth and over its sides almost as far back as could be seen. Deglutition was not only difficult, but impossible. The only attempt at medication was in mopping the throat with a strong solution of nitrate of silver. She died during the night.

Mary G., negress, æt. 43, mother of the two girls mentioned above, attended to them during their illness, using the same drinking vessels, &c. She returned home from the funeral of her elder daughter on Friday, the 16th, perfectly well. In the evening was attacked with sore throat, dysphagia, headache and prostration of strength. These symptoms increased during the night. On Saturday, a physician was called. He found the right side of the face and neck swollen, and the sub-maxillary gland of this side enlarged. Internally, patches of membrane flecked the tonsils and pharynx. A ragged ulcer existed to the left of the uvula—the whole throat of a dark dusky color, with submucous infiltration and tumefaction. She improved under a cordial, stimulating and special treatment (similar to that used in Miss T.'s case), until Monday morning of the 19th of March, when, for sufficient reasons, she determined to remove to the Baltimore Infirmary. She dressed herself and walked a short distance to a carriage, for this purpose. Entered that institution at 11 A. M. Notwithstanding a continuation of the same principles of treatment, her symptoms became greatly aggravated during the night, and at 8

o'clock, A. M., on Tuesday, March 20th, Prof. Frick proceeded to perform the operation of laryngotomy. This was done without difficulty. For a few hours she appeared relieved, but died at 12 M. same day.

Post mortem, made two hours afterwards, shewed a false membrane covering the fauces, tonsils and palate, extending into the larynx. There was but little below the incision of the operation. There was much œdema of the glottis. The bronchial tubes were reddened, and contained a large amount of mucus, but were otherwise healthy. The other portions of the body were not examined.*

Prof. FRICK returned from the funeral of Dr. B. B. Smith on the evening of Wednesday, March 21st, the day after the operation above related, and complained of chilliness, followed by fever, sore throat, headache, great depression and restlessness. His throat was found, on Thursday, by his uncle, Dr. Jno. Buckler, who attended him, in a condition similar in most respects to those already described. The disease terminated his life upon the 25th. It may be proper to mention the fact, that Prof. Frick complained of having sore throat himself on the 20th, previous to the operation. Twice during the operation he placed the tracheotomy tubes to his mouth to blow away the mucus.

Is diphtheria communicable from the sick to those in health? It is not intended to argue this question. The facts above are given without comment. In connection with them the above question is frequently asked, but by no means uniformly replied to by the profession. We would not, on any account, open the old question of "contagion." It is endless. How can it be otherwise, when, of the number exposed, so small a proportion are attacked? Twelve persons were in almost daily attendance upon Miss T. Three of them had diphtheria. Save in the case of Ellen G., the chain of cases was not lengthened. The physicians and attendants upon Prof. Frick were as much exposed to his person as he was to that of the negress, and no disease resulted.

[* Drs. G. F. POWELL, M. W. MERRYMAN and J. H. BUTLER, kindly furnished the above facts. W. C. VAN B.]

APPOINTMENTS OF PROFESSORS IN THE UNIVERSITY OF MARYLAND.

Seven Chairs have been vacated in this Institution within the last twelve years. Two of the Professors resigned their seats with impaired health, and five have died within the last six years.

The present Faculty have a right to expect increased patronage. The University of Maryland now offers to the diligent student, many facilities to the prosecution of the study of medicine, both as a science and an art, which should attract attention. It is not our province to enumerate them at this time; but to congratulate the senior members of the Faculty, the Students, and the Alumni of the Institution, upon the recent appointments made in the Faculty, is but a simple act of justice and courtesy to those gentlemen who are about to enter upon the responsible duties of teachers in this hitherto always honored school of medicine.

Dr. J. Roby, who had filled the Chair of Anatomy during sixteen years, with most brilliant success, during two years of which time he also lectured upon the Theory and Practice of Medicine, was obliged to tender his resignation to the Faculty, in March, on account of enfeebled health. Dr. William A. Hammond, U. S. A., was chosen to fill his place. This selection shews that Dr. Hammond's reputation is appreciated by the profession of his native State. Although he is a graduate of the University of New York, still his associations with Maryland must render this compliment particularly acceptable to him. Since entering the army, which happened almost immediately after securing his diploma, most of his time has been spent at the Western frontier stations, and particularly in New Mexico, where he distinguished himself by courage and activity in many Indian scouts. Nor was his love for science diminished amid these wild scenes, as the many specimens sent to the Philadelphia Academy of Sciences will testify. That his physiological labors have been favorably received abroad, as well as at home, we would judge from the

following notice, taken from the *Journal des Connaissances Médicales*, (Paris,) of February 10th, 1860. After giving an account of the observations of Dr. Wm. A. Hammond, U. S. A., on the effects of injecting Urea and other substances into the blood, the *Journal* says: "The labors of this gentleman in the field of experimental physiology, are widely known; and it is gratifying to reflect that the Professorship of Anatomy and Physiology in the University of Maryland, to which place he has lately been appointed, will allow him to devote more time to his important researches than the arduous duties of the position of an Army Surgeon would permit."

The papers he has published, so far as we know, are as follows:

"On the mutual relations of Urea and Uric Acid."

"Observations on the use of Potash in Scurvy, with cases."

"Urological Contributions."

"Experimental researches relative to the Nutritive Value and Physiological Effects of Albumen, Starch and Gum, where singly and exclusively used as food." This paper was published by the American Medical Association in their transactions of 1857, being one of their prize essays.

"On the Alterations produced in the Urine by Intermittent Fever, and the disulphate of Quinine."

"Observations on the colorless Blood Corpuscle."

"On the action of certain Vegetable Diuretics."

"Experimental researches, relative to Carroval and Vao, two new varieties of Woorara," and other researches upon poisons, which papers were published in connection with S. Weir Mitchell, M. D., lecturer on Physiology in the Philadelphia Medical Association.

Besides these published papers, Dr. H. has written numerous communications on various scientific subjects for societies of which he has been an active member. We wish him much pleasure and success in his new field of labor.

The vacancy in the chair of *Materia Medica* occasioned by the sad death of Professor Frick has been filled by the appointment of Doctor EDWARD WARREN, of North Carolina. This

gentleman is a Virginian by parentage, his father, Dr. William Warren, having removed in early life to Edenton, where he has worthily filled for many years a very high position in his profession.

Dr. Warren began his medical studies at the University of Virginia, and is a graduate of the University of Pennsylvania. Having received the advantages of foreign travel, he returned home and at once introduced himself favorably to the public, by his successful competition for the Fiske Fund Prize of the year 1856. This essay on the Influence of Pregnancy on the Development of Tubercular Phthisis was published by the committee, and is familiar to the profession.

For the past two years Dr. Warren has held a responsible position as Editor of the North Carolina Medical Journal, founded and supported, in part, by the Medical Society of that State. The Journal has been conducted with energy and industry from its commencement. The past life of the new Professor leads us to anticipate for him a future of usefulness and success, and he carries with him, in his present position, our hearty good wishes.

Dr. GEORGE FERNANDIS has been appointed Demonstrator of Anatomy in the University of Maryland, in the place of Dr. B. B. Smith, deceased. This appointment gives general satisfaction wherever Dr. Fernandis is known.

DR. BERWICK B. SMITH.

Died, in Baltimore, on the 20th of March, of Phthisis, Dr. BERWICK B. SMITH, æt. 35.

For six years he was Demonstrator of Anatomy in the University of Maryland, and was engaged in the practice of Medicine and Surgery with his father, Dr. Nathan R. Smith, Professor of Surgery in the same institution. He entered the Medical profession, after graduating at Princeton College, early in life, and devoted himself entirely to its practical duties. He was a good anatomist and a skillful operating

surgeon. Few men of his age were his equal in these branches. The protracted course of the disease in his case caused him to be a great sufferer for many years.

THE AMERICAN MEDICAL ASSOCIATION.

The annual session of this National Medical Congress, takes place on the first Tuesday in June next, at New Haven, Conn. The credentials of delegates should be forwarded to Dr. STEPHEN HUBBARD of that city, the Secretary of the Association.

The Medical College of Virginia will be represented on that occasion by Professors McCaw and Conway. Alternates—Professors Gibson and Peticolas.

The Convention of the MEDICAL COLLEGES OF THE UNION, will be held on the Friday preceding the first Monday in June, in the city of New York.

A large attendance of the Medical profession may be expected. The attractive season of the year, when Nature is putting on her spring garments, will tempt many a hard-worked doctor to seize the opportunity to take a well-earned holiday, and we hope that nothing may occur, during the sessions of either body, to disturb the harmony heretofore characterizing such meetings.

MEDICAL COLLEGE OF VIRGINIA—THE ALUMNAL PRIZE.

At a meeting of the Alumni of the Medical College of Virginia, held on the 9th of March, 1860, at the College Building, it was unanimously resolved that a Prize of ONE HUNDRED DOLLARS be offered for the best essay on "*The Influence of Climate, on the Origin, Development, Progress and Cure of Pulmonary Tubercle.*"

Graduates of the Institution *alone*, are permitted to compete for the prize, which will be awarded to the successful aspirant by a Committee of Physicians (*not alumni*), at the next

annual meeting of the Society, which will be held on the day immediately succeeding the College Commencement, in March, 1861.

All the essays must be sent to St. Geo. Peachy, M. D., President of the Society, on or before the first day of February, 1861, (to be by him submitted to the Committee of Award,) accompanied with a sealed envelope enclosing the name of the author.

Among the *five hundred* graduates of the Medical College of Virginia, we know many gentlemen, who are entirely capable of handling this interesting subject with originality and ability, and we doubt not, that an animated competition for this handsome prize will be elicited.

VARIEITIES.

SPECIES OF FRENCH DOCTORS.—"It is the world, my friend," writes a Frenchman, "which makes the fortune of a Doctor; most rarely do his brethren help him to it. And when we seek the motives of the world, which make it so enamored of this or that Doctor; when we ask how it is that so many *confrères* of highly superior intellect to those whom Fortune caresses, we find ourselves in the face of an enigma. See the funny gallery of portraits which success spreads before us! First, there is Dr. Prudhomme. Large and fat; face round and jolly, with a look of satisfaction spread over all his body; eternal black clothes, and white neck-tie; gold spectacles; thick eyebrows; grave and solemn air; uttering the most trivial facts with a loud, sententious voice. Is he learned and wise? All that is known of him is his Inaugural Thesis. Nominated President of a Society in his district, he is known to have returned thanks: "Gentlemen—this chair . . . is the happiest day of my life." How has this heavy, vulgar man managed to penetrate into such an excellent practice? Enigma one. Then comes Dr. Ecureil. This man runs, turns, ascends, descends, and is ever in motion. Little, thin, quick-eyed, cane in his hand, saying good day on the run, having time neither for eating nor drinking, making twenty or thirty visits a-day. How did this little piece of rapid mechanism captivate the public?

Enigma two. Next I present to you Dr. Charabias. Red, short, jolly, good fellow, making a regular hash of grammar, seasoning his sentences with well-marked *auvergnat*, tapping his male clients on the stomach, and his female ones on the back: Good day, old fellow! good evening, my dear! When he started he used to write his prescriptions, *Leaudanon de Sidenham, cinapism, etc.*; but the pharmacien has somewhat reformed his education. This man tires two horses a-day! Dr. Jocrisse is incomprehensible. He has an unalterable formula of questions. A proprietor gathering cherries falls, and impales himself. Dr. Jocrisse is called,, and gravely asks as follows: What age are you? Are you left-handed? Where have you pain? put your hand there. Does it often hurt you? Were your father and mother subject to this accident? To a young lady suffering from a burn, he asks: Does she suffer from hæmorrhoids? How many are there who owe their success to a positive vice?—*L'Union Méd.*

CRINOLINE.—“A respectable tradition may be invoked in favor of crinoline. Anchises was doubtless in an ecstasy at the sight of the one worn by Venus:

“Videns eam
Anchises admirabatur formam et stupendas vestes.”

And Ovid assures us of its antiquity in this expression of disappointment:

“Pars minima est ipsa puella sui.”

Thus crinoline continues its progress, spite of all protestations, easily stifled, of those who are chilled, or of those who are burnt by it. Our neighbors over the Straits have endeavored to take some measures against the accidents which are continually taking place through it. The Queen, whose power cannot rule the caprices, at least desires to save the lives of her subjects; and in accordance with her desires, M. Versmann and Dr. Oppenheim are at work endeavoring to find out some material which shall render incombustible the tissues in which ladies clothe themselves. They recommend tungstate of soda, and sulphate of ammonia, and especially the last, on account of its cheapness. At present, therefore, the pleasant fiction of the phoenix rising from its ashes may be accredited on each occasion that one of our imprudent beauties catches fire.”—*Gaz. Méd de Lyons.*

THE WIFE OF A PHYSIOLOGIST, A LA FRANCAISE.—A celebrated Physician, the chief of one of the great schools of the century, had in his young wife his principal disciple, his eminent auxiliary, of a vigor of mind truly masculine, of penetrating sagacity. The great physiologist who founded and formularized the law of Ovology, often saw (and saw well as has been proved) by the eyes of a woman. It is, perhaps, the most striking fact of this kind that an admirable wife, by an obstinate devotion, has so contributed to the revelation of marriage. Without this woman, should we have known woman? Her heroic effort, under the direction of genius, penetrated the great mys-

tery which opens a world to us. We loved at haphazard, in the dark. Humanity, which will now love in the light, will not be ungrateful, and drinking at these sources of love and happiness, will always remember Madame Pouchet of Rouen.—*Michelet La Femme.*

GRAPE AND WHEY CURE.—All travellers in Switzerland must have heard of the Grape Cure and the Whey Cure. A Dr. Lersch gives an explanation of their medical virtues. He is himself the author of a treatise on Balneography; and is, therefore, learned in mineral waters. He considers grapes and raisins to be compounds analogous to mineral waters—to be, in fact, mineral waters of an organic nature. He establishes a parallel between grapes and whey. Both are taken at their natural temperament; both contain a very small quantity of nitrogenous matter; they hold a large amount of sugar; sugar of milk, and grape sugar, both having properties, chemically, nearly identical. They also hold an organic acid with lime, and a certain quantity of salts. It appears that there are upwards of four hundred stations between the Alps and the Rhine, where this cure is being practised at the present moment.

FRONTAL EPHELIS AS A SIGN OF PREGNANCY.—The brown line from navel to pubes is a well-known symptom of pregnancy, not so the discoloration of the forehead, to which Daniel Turner alludes in the following passage: "There is a Spot in the Face, I must just stay to mention, more peculiar, according to our great master Hippocrates, to big-bellied Women, and reckoned as one of the Signs of Conception; nay, according to one of his Aphorisms, a Criterion (though fallible) of the Sex also: where he saith, 'Quæ utero gerentes, maculum in facie veluti ex folis adustione habent, eæ, faciem plerumque gestunt.' To this Spot or Mark Authors have generally given the Name of Ephelis. Sennertus describes it as a tawny, dark, or dusky Spot, principally seated on the Foreheads of breeding Women, and spreading both in Length and Breadth at some times to the Compass of the Palm of the Hand, without Asperity or Inequality.—"On Diseases Incident to the Skin," 1726.

PRIZE OFFERED.—To the Medical Students of the United States of America—I will give a premium of \$250 for the essay which shall be judged the best, by competent judges, on the Anatomy and Physiology of the Animal and Organic Nervous Systems. The essays to be sent to me on or before the 1st of March, 1861. I will likewise give a second premium of \$250 for the best essay on the same subject. The essays to be handed in on or before the first of March, 1862.

The medical students who shall be declared the successful competitors will be required to declare on their word and honor that the essays are their own production, and that they have not been assisted by any legally qualified medical man.

230 4th Street, Washington Square, S., } JOHN O'RIELLY, M.D.
March 8th, 1860. } [Amer. Med. Gaz.]

PHYSICAL ANTIPATHIES.—The physician who sounds the depths of our bodies, and knows how oddly the mucous membrane of one individual behaves, and what eccentricities are shown by the epidermis of another, is aware that this “too, too solid flesh” can have fads and fancies, tastes and dislikes, and show them, too, in a manner as decided and demonstrative as though the mental instead of the grosser organs were implicated. These physical idiosyncracies sometimes put on such extraordinary features, that we fear, in relating some of them, the reader will think we are romancing. For instance, he will readily assent to the old saying, that “what is one man’s meat is another man’s poison: nevertheless, he will doubt our good faith when we tell him of a man being poisoned by a mutton chop. Dr. Prout, in his valuable work on the Stomach, however, relates just such a case. This individual, with a contumacious stomach, could not touch mutton in any form. It was at first supposed that this dislike arose from caprice; the meat was therefore disguised, and given to him in some unknown form, but with the invariable result of producing violent vomiting and diarrhœa; and from the severity of the effects, which were those of a virulent poison, there can be little doubt that if the use of mutton had been persisted in, his life would soon have been destroyed. Strange and irrational as this behavior may appear to be, yet it is only a rather exaggerated example of stomachic capriciousness.—*Once a Week.*

MEDICAL PHILOSOPHY.—“The physician should be a philosopher,” wrote the Old Man of Cos, “and Galen repeated the sentiment, as have done also all great Physicians of all ages of the world. The difficulty is in knowing after what fashion he should become philosophic, or rather what sort of philosophy he should pursue and practice. From Hippocrates down to Barthez and Broussais, and M.M. Gibed and Bouillaud (who have lately indulged in a philosophic passage of arms), through Helvetius, Stahl, Van Helmont, Baglivi, Fernel, and the rest; Heavens! how many philosophies have we not had! And which is the true one?”—*L’Union Médicale.*

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ART. I.—*A Report of recoveries from Traumatic Tetanus.*

By CHARLES O'DONOVAN, M. D., and W. C. VAN BIBBER,
M. D.

DR. W. C. VAN BIBBER,—*Dear Sir*,—The following case of recovery from Traumatic Tetanus is at your disposal for publication.

Terence Coyle, aged 22, fell, Friday, April 13th, from the second story of a house upon a pointed plank about two feet long. The sharp end entered about the lower edge of the left gluteus muscle, took an upward and inward course to the extent of eight inches. When removed, the point was broken, and parts of pants and drawers were wanting. The wound was searched, but no foreign body found. Hemorrhage very profuse, but gradually ceased. The treatment was simple, anodyne at night and poultices to wound.

He did well until Saturday, 21st April, when, on account of the weather, he threw off the bed coverings. The following day complained of neuralgic pains in chest. April 23d: the discharge from wound became suddenly less, until Tuesday 24th, when, at 1 P. M., he complained of painful twitches, which he referred to the wound; at six, these had become more frequent and violent; they affected nearly all his muscles.

Being satisfied tetanus had begun, I determined upon a full and fair trial of *cannabis indica*—Squire's extract, fresh and good, was the preparation used throughout his disease.

He began by taking one-fourth grain every three hours, which, after the fourth dose, was increased to one-half grain every two hours.

The morning of 25th, showed no abatement, but an increase in the intensity of spasms, when he was given one grain every hour; after having taken four doses the pain still increased, and he was ordered $1\frac{1}{2}$ grains every hour.

April 26: The spasms were more frequent and severe, coming on every two or three minutes. His pulse had fallen from 100, yesterday morning, to 76—appetite and digestion good, skin moist, discharge increased, appearance better. Ordered two grains every hour. Towards night the frequency of spasms diminished. Had eaten a roll, drunk beef tea and milk, and seemed in a more favorable condition. Up to this time, 10 P. M., he had taken 117 grains, before any decided impression had been produced, indicating a diminution in the intensity of the tetanic spasms.

A quiet, dreamy condition now existed, and in the interval between the spasms, though not sound asleep, he rested comfortably.

April 27th: Condition about the same as last night. Fearing exhaustion, I increased the dose to three grains every hour, and before night to three grains every half hour. April 28th: Condition as yesterday—very little sleep, pulse 74 and good, appetite good; drank freely of beef tea, milk, and water. Complains of bed sore on right hip, and of much soreness in the wound. Bowels moved about six times in bed. We were unable to touch him without immediately causing more severe spasms. He talked freely, seemed in good spirits when roused, has pleasant dreams, sees objects moving about him. Thinks his legs have been removed, says he will get well, wishes to be kept quiet. Gave one-third grain morphia and three grains of tannic acid. To continue six grains *cann. ind.* every hour.

April 29th: Saw him at 9 A. M. Slept about six hours last

night. Had three spasms since daylight. Bowels moved twice, one green, the other mucous. Spasm produced by slightest shock, noise or touch, pupils natural, eyes closed, pulse 80—profuse diaphoresis. Urinates in bed with great pain. Can make no effort to use a vessel.

April 30th, 9 A. M.: About midnight his spasms became worse, tending to opisthotonos, muscles of throat and tongue much affected. Skin, pulse, appetite, &c., same as yesterday. Ordered medicine increased to 9, 12 and 18 grains within the hour; this seemed to check the spasms toward night, and he was disposed to sleep. Pieces of wood came from wound.

May 1st, 9 A. M.: During the past 14 hours he had taken 180 grains, which kept him a drowsy, dreamy, muttering condition. His appetite, pulse, &c., continued remarkably good. The bed was much soiled, odor very unpleasant. Had him taken from it and laid upon a mattress upon the floor, until clean bedding could be arranged. This increased the paroxysms very much; his case now appeared desperate. I gave 3j cannabis indica within one half-hour, and ordered 18 grains every half hour until relief appeared. Repeated morphia and tannic acid.

May 2d: Visited him at same hour. He had slept comfortably six hours. Had taken 138 grains during night before sleep was produced. The spasms ceased until noon, when they returned with less violence and at longer intervals; to continue same treatment, graduating doses according to the violence of the spasms. Chips and pieces of clothing came from wound.

May 3d: Bowels moved about four times—color green; pulse 70 and weaker, appetite good, drowsy, slept but little through the night, spasms every one half-minute, but feeble. Gave tinct. opii. camph. 3j.; ordered cannabis indica grains vj. every three hours, more frequently should they become severe. More splinters came from wound.

May 4th: Bowels checked; spasms every three minutes; passed restless night; stiffness and soreness of neck, due partly to long continuance in the same position; continue treatment.

May 5th: Rested some last night; constant muttering de-

lirium. Although easily roused to answer sensibly, he quickly relapses into the dreamy talkative condition in which he has been for some days. He persists in believing his legs have been amputated. Bowels quiet; drank freely of beef tea, cream and port wine. Tetanic spasms have almost ceased since midnight; sensations agreeable; urinates without any pain. During past night took six grains every half hour. More chips came from the wound. Stop cannabis indica; ordered to drink freely of hop tea, and to take ʒj elixir opii., M'Munn's, every 3 hours. He has now taken 1437 grains of Squire's extract cannabis indica. Tetanus has nearly ceased.

May 6th: Slept soundly four hours last night, without any tetanic twitches. This morning had two or three, very mild, at intervals of about three hours. His mind still unsettled; appetite, pulse, skin, bowels, and general appearance very good; discharge from wound free and healthy, the orifice gradually closing; a few splinters come now and then; takes plenty of nourishment, without, however, having the ravenous appetite he possessed whilst taking large doses of the cannabis indica. He improves steadily up to this time, May 12th. Has had no spasms during the past three days, but continues dreamy and talkative, but always ready to answer satisfactorily any question. The tetanus I consider cured; but since the mental condition of the patient is, in my judgment, due to the large quantity of the remedy taken, and since this condition from a like cause is new to me, I prefer to watch what nature will do, rather than administer anything in the hope of facilitating the return of his normal mental condition. The large doses of the remedy certainly controlled the disease, and, in my opinion, saved his life. The opinions of Drs. John H. O'Donovan, Van Bibber and Johnston coincide with mine. They had frequent opportunities of seeing the patient, and with their consent and approval, the treatment was adopted and carried out. The extract was fresh and strong, imported expressly for Andrews & Thompson, by H. Haveland, 23 John st., N. Y. I tested it upon a healthy person, upon whom its effects in one-fourth grain doses were freely shown before

three grains had been taken. The effects of the doses used upon the tetanic patient were, increase of appetite, profuse diaphoresis and increased discharge from wound. His sensibility to pain became much blunted and the moment the spasm passed, he relapsed into a dreamy and even happy condition. There were no complaints of sufferings past, or fears of pains to come. His impressions and thoughts were but of the moment; with an ability to answer correctly concerning his sensations now, he could give no accurate statement of his condition yesterday, or even an hour ago.

He had, when awake, a quick progression of unassociated ideas, with considerable and often happy facility in expressing them. None of his ravings indicated the terrible or horrible, but rather related to his occupation or something pleasant or interesting.

Persons and things without number he saw and spoke of, but none wished to frighten or injure him. He evinced no fear of death, but rather a comfortable or careless assurance of recovery. His body and mind were not worn, but his physical condition, notwithstanding bed sores, uncomfortable position, foul bedding, bad odor, profuse perspirations, diarrhoea, small and close room, warm weather, passings of splinters, &c., continued as good as if he were but one day sick.

From the third day the remedy showed its power over the disease, and if, at any time, its exhibition was delayed, the intensity of the spasms increased. Had it been possible to have had him supplied with more conveniences, or so situated as to be removed from noise and free from touch and motion, his recovery would have been more rapid. When necessity obliged the change of bedding, we witnessed a terrible aggravation of the disease. The remedy was then used without fear or measurement; at one period, from 7 A. M. May 1st, to 7 A. M. May 4th, exactly three days, he took 780 grains, and even this enormous quantity did not produce, for a moment, one single symptom to contra-indicate its exhibition, if thought advisable, in still larger doses. When we produced sufficient quiet, we only used such quantities as kept up this

state. More than this prudence forbade; but the continued delirium, or rather wakeful and talkative, generally semi-rational, condition, has been the only unpleasant effect. This has now lasted five days, but he has slept at intervals during this time; but how long it will be before reason resumes her guidance of the patient, time must yet determine.

If this condition should pass away, as I confidently anticipate, I trust that the influence of this remedy will be fairly tried by many members of the profession, and the results of their experience communicated for the benefit of all.

Respectfully yours, CHARLES O'DONOVAN, M. D.

To this interesting case, as reported by Dr. O'Donovan, a synopsis of three others, also observed by myself, may not be uninteresting. The occasion is a fair one to give our readers an opportunity to determine upon some plan of treatment for a disease against which they are constantly liable to be engaged.

Physicians have always found Traumatic Tetanus so fatal that the earliest symptoms of the disease are always observed with great anxiety. The aphorism of Hippocrates, that "tetanus supervening upon a wound is mortal," has been stamped with more certainty on the pages of medical literature than the records of the disease would warrant. Physicians of large experience have never seen a case recover. Drs. Hennen, Dickson, Morgan and O'Beirne are quoted by Drs. Watson and Symonds to this effect. After a sufficient number of cases of traumatic tetanus had been reported as "*recoveries*," a classification of the disease was proposed. "Mr. Guthrie has the merit of having been the first to draw the attention of the Profession to the *mild* species as contra-distinguished from the acute."

The disease was classified into the acute, sub-acute and chronic. It is the acute form alone to which these writers refer, who pronounce so confidently upon its uniform fatality. This classification seems to be a scientific necessity, for the minds of those who are sceptical concerning the effects of re-

medies. But it should be an equal necessity for the practical physician to regard every case as acute from its commencement, and to lose no time in endeavoring by remedies to reduce it to the sub-acute, mild or chronic variety, which, in fact, is equivalent to curing the disease.

From Dr. Watson's lecture upon tetanus the following quotations are selected, upon which but a single comment will be made. "The treatment of tetanus (says Dr. W.) is a mortifying subject. * * * I was assured by a physician with whom I formed an acquaintance in Edinburgh some years ago, that his own wife, while laboring under a tetanic affection, swallowed, in twenty successive days, upwards of 40,000 drops of laudanum, which is at the rate of more than four ounces a day; in all, more than two imperial quarts. * * After all, in respect to the cures that have been ascribed to the opiate treatment, they have all (so far as I know) occurred in cases of the milder or more chronic tetanus; and mostly in the idiopathic form of the disease; and this circumstance makes it a question whether they were *cures* at all; whether they were not simply recoveries." (Watson's Practice, second American ed., pp. 360 and 361.)

In this case is it easier to believe that the tetanus was cured, or that the patient would have been killed by the treatment but for the existing disease? Is not the exhibition of a remedy in large poisonous doses, when the system is in a pathological condition, (provided there is sufficient vitality,) therapeutic proof that this condition is thereby overcome or cured?

It had been the privilege of the writer to have seen, in consultation, four cases of traumatic tetanus. Three of these recovered, and, as he thinks, were cured. He had not the merit of suggesting the remedy in any case which seemed to contribute to this result, but was a passive observer of the treatment as originally proposed by others. The remedies employed were different in each case, but all belonged to the same therapeutic group. The cases were substantially as follows:

First—The case of Fifer, reported by the late Dr. E. W.

Theobald (*Am. Journal Med. Sciences*, January, 1848, art. ix. page 96). The tetanus resulted from a lacerated wound of the right hand. The inhalation of the vapor of ether was then a new remedy, and, on this account, Dr. Theobald gave it the greatest point and importance in the article. Those who may refer to it, must determine for themselves which agent was the most efficacious in the treatment, the ether or the opium. The tetanus occurred on the 17th day, and continued 16 days. The danger was apprehended and anticipated by large doses of opium from the fifth day. This *may* have deferred the attack, and left its impress upon the subsequent disease. Amputation was resorted to; and, during the sixteen days of the disease, ether was inhaled twelve times. Since that time, we are more familiar with ether inhalation; and few physicians will now be inclined to attribute much prominence to this agent in the treatment of Fifer's case.

It was not so severe as the two following cases, and the writer now believes that the favorable termination was more due to its general management and to the other remedies employed, particularly the amputation and the opium, than to the ether.

The second was that of Welsh, a laborer; æt. 42. It was reported to the Pathological Society of Baltimore in September, 1857, by the writer, in the absence of the late Prof. Frick, by whom the case was treated.

The tetanus resulted, in this instance, from a large spike-nail penetrating the foot, which was not removed until the second day after the disease was developed. The spasms commenced violently on the fifth day after the accident, and continued nine days. The patient had opisthotonos and trismus. The treatment was by opium and camphor. The average quantity taken was 80 grains of the former, with 160 grains of the latter, every 24 hours for nine days. After which there were no more spasms. The whole quantity of opium taken was about 700 grains, with double the amount of camphor. Welsh was beyond the average height, weight and strength, and possibly this amount of opium might not have killed him when in health; still the physiological effects were so dispro-

portioned to the amount given, that it is therapeutically fair to conclude the force of the remedy was exerted in controlling the disease.

The third case was that of Walters, a lad eleven years of age. The disease resulted from a rusty nail penetrating the sole of the foot, and when suppuration occurred, it pointed upon its dorsum. The spasms were almost continuous after the second day, before which he was not submitted to treatment, and the trismus was complete. The only remedy availed of, or at all available, was inhalation. The agent used was chloroform. The boy died in less than twenty-four hours after we saw him.

The case above reported by Dr. O'Donovan is the fourth and last. The amount of medicine taken by this man, as far as we know, is beyond all precedent. We are all aware of the difficulty of establishing the proper treatment of such a disease as tetanus by a single case. Such an endeavor is impossible and improper. Yet the facts, as reported, should encourage physicians in the future. The opinion already advanced, that the three men now living would have died if left to the "*vis medicatrix naturæ*," is based upon the recorded mortality of tetanus occurring from a wound, when left to itself, or when submitted to other or mixed treatment. If the difference in the individual remedies employed can be reconciled by their being found in the same group by recent therapeutographers the next question arising is, how far can the present writer be trusted as authority in comparing their respective merits? It has been stated above, that he did not agree with Dr. Theobald in considering the ether in Fifer's case as the main remedy. Therefore, but two agents remain to be compared, viz. opium and cannabais indica. Opium is a time-honored remedy in the treatment of tetanus. Its effects, in full doses, are so antagonistic to the phenomena of this disease, that its employment has seemed a natural sequence. It requires a bold and ready practitioner to carry it to the great lengths we seem justified in doing in this disease.

Dr. S. T. Knight assures us he has seen but one case of "trismus nascentium" recover. It commenced the 2d day after birth.

He prescribed a liniment for the spine, and powders to be taken internally. The mother, a German, made the mistake, and gave the liniment internally. Each tea-spoonful contained 10 drops of laudanum. Of this, the child took eight tea-spoonfuls in twenty-four hours. No limit seems yet to be prescribed to the exhibition of opium in tetanus. It must be given to the controlling of the spasms, or else, as a curative agent, it is useless. *Cannabis indica** was, in the case reported, free from some of the objectionable effects of opium. It neither constipated the bowels, nor impaired nutrition. On the contrary, it acted as a laxative, and evidently increased the appetite. The delirium produced was always pleasant, but continued longer than the delirium from opium; being still present, according to the report, five days after the last dose was taken. If it is hereafter proved to be as powerful an agent in controlling the spasms of tetanus, it will be found, for the reasons given, a more pleasant and eligible remedy.

ART. II.—*Ligature of External Iliac for Traumatic Femoral Aneurism.* By CHAS. BELL GIBSON, M. D., Professor of Surgery in Medical College of Virginia.

MASTER T. L. of New Kent co., æt. 16, while playing with a pen-knife, in August, 1859, let it fall on the front of the left thigh, near the groin, inflicting a punctured wound which produced hemorrhage of a few ounces. By the application of cold and pressure the bleeding soon ceased. Some swelling occurred almost immediately afterwards, but disappeared gradually in a few days. The small wound quickly healed and the patient felt no inconvenience from the accident until the early part of January, 1860, at which time his attention was called

* The usual dose of Squire's Extract is from one-eighth to one-fourth grain.

to a small tumor occupying a position midway between the pubes and ilium, partly above and partly below Poupart's ligament. It gave no pain, but pulsated distinctly. There was an occasional rather painful sensation down the inner side of the thigh.

Mr. L., the father, brought his son to me for examination on the 17th January, 1860, and gave me the facts above mentioned. At this date, I found a tumor larger than an ordinary hen's egg, and somewhat of that shape, extending above and below Poupart's ligament, presenting the usual symptoms of aneurism. I pronounced it, accordingly, traumatic aneurism of the femoral artery and advised ligation of the external iliac.

At Mr. L's. suggestion, Dr. Bolton was invited to examine the case, and agreed in this diagnosis and mode of treatment. The operation was done on 28th January, at 3 P. M.; present, Drs. Bolton, Landon Rives, Cullen, E. Mason, Robertson and Clopton.

Ether was administered for an hour without effect, and Chloroform being then substituted for it, in a few minutes the patient was completely anæsthetised.

Lisfranc's method of operating being selected, an incision was made, on a level with, and an inch within the anterior superior spine of the ilium, and carried downwards, terminating an inch above the spine of the pubis and about an inch and a quarter on its outer aspect. The abdominal muscles were divided and the transversalis fascia exposed. This was then carefully scratched through, and the peritoneum exposed and pushed aside. It was then held out of the way by an assistant's fingers. The artery was felt pulsating along the border of the psoas muscle, and being separated by the finger-nail and knife-handle from the vein, the aneurism needle was passed between the vessels and the ligature applied.

Pulsation in the tumor instantly ceased. The usual dressings of suture and adhesive strips were made, and the limb was then carefully enveloped from the toes to the groin in repeated folds of cotton wadding secured by the roller.

At 10 P. M. between 8 and 9 hours from the ligature of the artery, the collateral circulation was perfectly established.

On the 31st January (3d day) the wound was inspected and sutures removed. Union had taken place everywhere but at point of exit of ligature.

On examining the tumor, I was struck with the great diminution in its size, but somewhat annoyed at detecting a slight pulsation, more distinct on its inner aspect, where pulsation had been most marked before the operation. There was not the slightest thrill—and the pulsation itself was so slight as scarcely to be detected, and leaving me in doubt whether it was within or beneath the tumor. On the 3d February it could no longer be detected.

March 8th, to-day, the 40th from the operation, the ligature was removed with the slightest effort, having remained very firm up to the day previous (7th.) Slight traction had been made upon it every day for two weeks before its removal. The wound closed entirely on the 10th March, and the patient returned home on the 14th, with scarcely a vestige of the aneurismal tumor.

ART. III.—*Paralysis during Measles.* By D. J. M'KEW, M. D., Baltimore.

THE following case which recently occurred in my practice, may prove interesting to some readers of the Journal, as illustrative of a condition which has recently attracted considerable attention in connection with several blood diseases, and notably as a concomitant or sequence of diphtheria. I also add two cases of a strikingly similar kind, which I translated from the "*Abeille Médicale*," of Feb. 6th, 1860, into the columns of which journal they have been transferred from the *Gazette des Hôpitaux*, together with the remarks of the editor of the latter journal.

John N., a hitherto healthy little boy of four years of age, was attacked on March 2d, 1860, with fever of a catarrhal character, and the other usual prodromes of Rubeola. Called to him on March 6th. I found the eruption of measles well out on the face and front part of the trunk, and his general condition so favorable that, contenting myself with prescribing for his cough, I left him with the remark, that it would not be necessary to call again. On the morning of the 8th, however, I was recalled, the mother stating that a very serious change had occurred. I found the child in bed, the eruption somewhat faded but normal, the skin feeling pleasant, and the fever less than on my visit two days before. The expression of his countenance was very singular. Generally bright and intelligent, it was now vacant and staring. The pupil was not dilated, nor was there any contraction of its aperture, but the expression of the organ was entirely changed without any appreciable alteration of its physical condition.

My attention was also called to a loss of power in the hands and arms, not amounting to total paralysis, but preventing the patient from directly seizing any object. I say *directly*, for on placing an object near his hands he would, after much trouble, arising from want of co-ordination in his muscles, finally attain the object which, when obtained, would be grasped so feebly and awkwardly as at once to fall from the hand. There was no jerking of any of his muscles. The lower limbs, as he lay in bed, as well as the rectum and bladder, were entirely under his control. He had also lost all power of speech, and on giving him a drink part of it was returned through the nasal passages. On examination of the throat there was found nothing more than slight redness of the velum palati, and the soft parts of the fauces, nor did search elsewhere yield any more positive results. With the exception of the paralysis and the expression of the face, there was actually nothing more to be discovered than in any case of measles of the same date. All that I could obtain from the mother, a careful and intelligent woman, was, that on retiring to rest on the previous night along side of her boy, she had noticed nothing unusual in the

case, that during the night he was a little restless, but that nothing attracted her special attention until, on rising in the morning, she was struck by the boy's peculiar expression, and still more alarmed at the loss of voice and of power in the arms and hands. She had not noticed anything approaching convulsion or coma.

Such being the case, I concluded to adopt the adage of Gaubius: "*Melius est sistere gradum quam per tenebras progredi*," and contenting myself with the occasional use of a laxative of ol. ricini, to relieve the slightly constipated bowels, and the administration of nourishing broths, although the strength of the patient was almost unimpaired, I awaited the further development of the case. Five or six days then passed without any marked change in his condition. During this time he indicated his wants by a kind of grunt or an impatient whine, but beyond attracting the attention of his mother, he was incapable, on account of the total loss of voice and the almost entire want of control over his hands, of giving any special indication of his wishes. His intelligence, however, seemed good, and he manifested the ordinary peevishness of sick children on being asked to show his tongue. He would then turn his face away and force was necessary to open the mouth; it hence was impossible to ascertain the condition of the tongue as to the paralysis. The common sensibility of the integuments was everywhere unimpaired. He was now free from fever, his eruption had disappeared, but he had no appetite and very little thirst. His beef tea was now changed for beef essence, and small doses of quinine and citrate of iron exhibited, the use of stimulating frictions, with whisky over the limbs and along the spine, was also insisted upon.

Under this treatment, he had, on the 21st of March, so far recovered as to be able to hold and carry food to his mouth with either hand; the power of deglutition had also improved, but he was incapable of any other vocal sounds than those alluded to. His appetite had returned somewhat, and his pulse was now stronger. The frictions and other treatment being continued, a small vesicatory was now applied over the

larynx, and an open surface kept up for a week, at the end of which time he could imperfectly articulate the word "yes." He was now permitted, his strength having greatly increased, to get out of bed, when, for the first time, we discovered that he was unable to stand, and that the legs shared the paralysis which had affected other parts of his body. The knees, when standing, approached each other and yielded to the weight of the body, the toes were thrown inwards, and while advancing with him (the hands supporting him under the arms) and encouraging him to try to walk, the legs were dragged just as those of an infant. When sitting on a broad-bottomed chair, or on his bed, his legs were under his entire control, and I was no little surprised at the want of power manifested on assuming the erect position.

It is now the fourteenth of April, and the condition of the boy is as follows: Expression of face natural, color good, pulse and respiration, appetite and digestion normal; heat of surface and sensibility natural everywhere; intelligence perfect. He can now express himself in words, but in a very imperfect and halting manner; deglutition is easily and naturally performed. He has regained control over his arms and hands, but his grasp is very weak. There is no increase of power in his lower extremities. He has been for the last week using strychnia in fractional doses, and the warm salt-water bath morning and night.

This case will be found to present many features in common with the second case narrated below, but it will be found also to differ from it in many striking particulars. The early stop of the primary disease, the absence of debility, and the power over the lower limbs while in bed, are points worthy of consideration. As to the cause of the paralysis, I must confess my inability to give any positive opinion; it evidently was not due to debility, and could scarcely be attributed to the "specific" poison of measles. It is possible, however, that a convulsion, unnoticed by the mother amidst the restless tossings of a feverish child, or occurring when her sleep, heavy from fatigue in spite of her anxiety, rendered her incapable of perceiving it,

may have happened, and that some effusion taking place in the brain, set up the lesions of motility, which occupy our attention. I now add the very interesting cases from the 'Abeille,' under the title of

Paralysis supervening during the latter stages of or convalescence from acute diseases.

Since the attention of the profession has been attracted to those cases of partial paralysis following diphtheria, and subsequently to the occurrence of paralysis more or less general as a sequence of various other febrile diseases, examples of such facts have been frequent; and questions of grave interest arise upon a close examination of their history. Among others, the most prominent is the question, if the paralysis of diphtheria, variola, typhoid fever, etc., be due to the action in each case of a distinctly specific poison, as some *cliniciens*, and especially M. Trousseau, profess; or if, on the contrary, according to the opinion recently so ably maintained by M. Emile Bernard, all these paralyses, whatever be the disease which has preceded them, have a common origin, and have, as a starting point, the debilitation of the nervous system, produced either by disease, or by the action of a long continued system of diet.

We here present two cases of paralysis, the former following on diphtheritic angina, the latter supervening during the decline of typhoid fever, and for which we are indebted to MM. Ricordeau, of Nantes, and Jousset, of Belesmes. They each contribute, with different significations, their moiety to the elucidation of the subject under consideration.

Partial paralysis and general debility following a very slight case of diphtheritic angina.

Towards the close of last July, M. Ricordeau saw a child three years of age, suffering from very severe croup. In spite of all efforts and care, the child died on the fourth day. Eight or ten days after the death of this child, an elder sister, aged

7, complained of a slight pain in the throat, (upon the very day on which, in spite of prohibition, she had been allowed to enter the chamber of the dead child,) and, during the evening, she experienced general malaise, and suffered from intense fever during the night. The next morning she was brought to M. R., who cauterized some pseudo-membranous concretions on the tonsils. An emetic was then exhibited, and rigorous treatment instituted against diphtheria. The cauterizations were repeated several times. Two or three days afterwards, hemorrhages took place from the nose, which were restrained by injections of the perchloride of iron. The treatment lasted three or four days, and a cure was effected. Ten or twelve days, however, after disappearance of the diphtheritic symptoms, the child was noticed to have a very nasal voice. On inspecting the throat, the velum palati was found completely motionless, and food was returned through the nose when taken a little rapidly. The child's vision was indistinct, particularly at evening, and she could no longer read. A feeling of general debility was occasionally manifest. In this case, the vision improved, though the nasal character of the voice had not as yet disappeared when this case was written. It seemed, however, to be growing less marked. The general health and strength of the child were soon re-established.

M. Ricordeau thinks that, in this case, the paralysis could not be attributed to those common causes invoked by M. Bernard, the affection having been too slight and of too short duration to bring about marked nervous debility. In his opinion, and we must confess there is probability in its favor, the cause must be sought in the poison of diphtheria. It would moreover appear, from this and other analogous cases, that great intensity of the local lesions of diphtheria are not required for the production of paralysis, and that, according to the theory of "intoxication," a greater or less degree of concentration or malignity in the poison suffices to account therefor.

The following case, observed by M. Jousset, is more reconcilable, perhaps, to the theory of nervous depression, although

the disease was neither intense in degree, nor of protracted duration :

General acute Paralysis consecutive to Typhoid Fever.

In the month of September, our confrère was called to a child *æt.* 10, with a grave form of typhoid fever, which terminated fatally in the sixth week. A younger brother already complaining since the death of his sister was soon attacked by the same symptoms, but in his case disease assumed a more benign form, and from the third week alimentation became practicable. Nevertheless his strength did not return, and about the commencement of the fourth week, the child, which remained still in bed, became affected with rapidly increasing dysphonia, which soon became complete aphonia with entire loss of voice and speech. M. Jousset, on being recalled to his patient, found him in bed, weak and motionless. The mouth and fauces examined with care, presented no trace of lesion of any kind; the expression of the face was idiotic, but intelligence was not entirely abolished. When hunger or thirst was experienced, the child slowly turned its head towards the place on which its food was and uttered a kind of grunt or plaintive brute-sound. Upon being asked to press an offered hand it grasped it, but the pressure was exceedingly feeble. Its legs were completely without motion. (The condition of their sensibility was unfortunately not examined.) The state of the other functions was satisfactory. The skin was free from febrile heat; the pulse comparatively slow, the belly not swollen and free from pain; the stools natural, and respiration normal. M. Jousset, prescribed nourishment, and flying blisters to the legs. This latter treatment had no effect, but the application of a blister to the nucha was followed by better results. On the day following its use, the patient began to articulate some words, and in a few days speech was entirely re-established. The mute state had lasted an entire week. On the 3d of December, at the end of the fifth week of the disease, the patient had entirely recovered intelligence, and spoke perfectly; it ate voraciously day and night, but it could not eat unaided;

its hand was still incapable of holding and managing objects, but its grasp had become stronger. Placed on its feet, but supported under the arms, it walked just as a child to which the first lesson is given in walking; the feet were dragged, with the toes inverted and the legs bent under the body. Aromatic frictions, and the internal use of strychnia, were advised. After the lapse of five days, the patient commenced to walk, sustained by one hand only. Finally, during the sixth week (the third of paralysis), it had entirely regained the use of its limbs, and the cure was complete.

Notwithstanding the absence of some particulars in the relation of this case, it nevertheless constitutes an example of this kind of paralysis, not ascending, as in some cases formerly related, but progressive and more or less generalized, manifesting itself during the decline of or convalescence from acute disease. Facts of this kind, we have said, are multiplied by inquiry, and at a recent meeting of a medical society in Paris, several members related cases of a similar kind to the preceding. A woman, under the care of M. Demarquay, having suffered from paralysis of the velum palati after an attack of diphtheria, was seized, upon its cure, with general paralysis, characterised by debility and the loss of all movement, with conservation of general and special sensibility.

Mr. Labbé recalled the case of a woman under the care of M. Briquet, in 1857, who had been brought into "La Charité" with paralysis of the velum palati, pharynx and œsophagus, in consequence of an attack of diphtheria. Marked debility of the whole body, and especially of the right side, was noticed and progressed very rapidly. Attributing this weakness to inanition, and remembering the cases of œsophagismus cured by catheterization related by Gendrin, M. Labbé attempted the nourishment of the patient by the aid of the sound. Under this treatment, the strength appeared to rally a little. Unfortunately a contraction of the lower jaw, and the narrowness of the nasal fossæ, obliged him to discontinue catheterism; the patient's debility increased, and she died in a state of maras-

mus after three months. No lesion was anywhere discovered on post-mortem examination.

Finally M. Marotti related two cases of paralysis, consecutive to diphtheria. One was cured by electricity. According to the opinion of this gentleman, sea baths, cold affusions, sulphur baths, electricity and tonic regimen constitute the best treatment in cases following diphtheria. We would advise just such treatment in paralysis consecutive to acute disease in general. The utility of tonic alimentation has been acknowledged by all who have observed cases of this kind, and is one of the means on which M. Jousset has very properly insisted in the case communicated to him.

ART. IV.—*Railroad Accident*.—A case from the Record of the Infirmary of the Medical College of Virginia. By THOS. L. HUNTER, M. D., Resident Physician.

TO-DAY (April 11), Daniel, a negro man, in a state of intoxication, fell with his head upon the track of the Richmond, Fredericksburg and Potomac Railroad, and was struck by the engine of a train of cars while moving at a very moderate speed. The accident happened about 2 o'clock, and he was brought to the College Infirmary at 4 o'clock.

Report.—He is in an insensible condition—with pupils moderately and irregularly dilated—pulse slow and weak—skin cool and moist, and he vomits a great deal of undigested matter. Upon an examination being made by Dr. A. E. Peticolas, the attending surgeon, he is found to have a contused wound on the left side of the head, just in front of the parietal eminence; no other portion of his person having sustained injury. The wound on the head being freely laid open with the knife, the bone is discovered to be uninjured. Ordered calomel, grs. xx., to be given at once. Apply mustard plasters to the legs and

over the abdomen, and close the wound with adhesive strips, and keep wet cloths to the head.

April 12th.—There is some improvement in his condition to-day. He is not entirely unconscious. His pulse is very irregular and changeable, being at one time slow and full, at another quick and feeble, varying in the course of half an hour from 40 to 120 beats to the minute. His surface is warmer than it was yesterday. No action from the bowels yet. Ordered: R. Calomel, grs. xx; ol. tigllii, gtts. ij. Apply a bladder containing ice to the head. And draw blood by cups from the back of the head and neck.

April 13th.—Still lies in a comatose condition. Rouses occasionally and takes a few spoonfuls of milk. Pulse is weak and very variable, and the extremities are cold. The dose of calomel and croton oil had to be repeated, and an enema administered before we could procure an operation from the bowels. Since then he has had several copious stools. Ordered: an occasional spoonful of milk-toddy (strength one part of whiskey to five of milk), a large blistering plaster 8×10 inches over the stomach and upper part of the abdomen, and apply hot bricks to the feet.

April 14th.—Early this morning he sat up in bed and asked for some water to drink, he also passed his water in a basin that was handed him, directing the stream himself. His pulse was at that time slow, and rather stronger than it had been, and less irregular. He seemed more conscious than he had been since the accident happened. He has gradually grown worse since 12 o'clock, he is now completely comatose—pulse 140 to the minute, and in a profuse perspiration. Ordered: This morning, milk toddy and beef essence in small quantities; afternoon, calomel, grs. ij., every three hours; apply blister to the back of the head and neck, rub in ung. hydrarg. on the inner parts of the arms and thighs, and apply a plaster of the same to the blistered surface over the stomach, and keep ice to the head.

April 15th.—Since the middle of the day yesterday, symptoms of compression of the brain have become more and more

strongly developed. To-day, the slow, laborious respiration, full, regular pulse and total loss of consciousness and sensibility, the relaxed and powerless muscles, dilated and insensible pupils, and the warm and moist skin, all give evidence of the approach of death from compression of the brain. Died at 2 o'clock to-day.

April 16th.—A “post mortem” examination discloses a clot of blood, three inches in diameter, between the bone and dura mater covering the left hemisphere of the brain. There is a fissure in the cranial bones commencing an inch and a half below the wound in the scalp, and therefore unnoticed during life, first running horizontally along the lower third of the parietal bone for a short distance, then passing almost vertically downwards to its anterior inferior angle. Crossing here the groove for a large branch of the middle meningeal artery, it is continued onward across the great wing of the sphenoid bone to the foramen rotundum, thence upwards under the anterior clinoid process, where it divides into two branches, one running across the sella turcica to the right carotid foramen, the other continuing upwards to the ethmoid bone, where it is lost.

From the symptoms exhibited during the life of the patient, and the disclosures made on examination after death, it is safe to assume that there was at first severe concussion of the brain, with laceration of the coats of a large branch of the middle meningeal artery; and when re-action took place the coats of the vessel gave way under the increased force of the heart's action, and effusion and compression followed.

ORIGINAL TRANSLATIONS.

I.—*Essay on the Surgical Treatment of Abscesses of the Breast, by the Method of Drainage.* By M. LE DR. CHASSAIGNAC, of Paris. Translated for the Maryland and Virginia Medical Journal by WM. MASON TURNER, M. D., Petersburg, Va.

THE object of this essay is to establish, on a new basis, the Surgical Treatment of Abscesses of the Breast. It is with a therapeutic aim that, in my studies by the bedside of the sick, I have considered this important subject. In regard to the treatment of Abscesses of the Breast, my principles are very simple. They can be resolved into a series of propositions, viz :

1. Open at the first onset every abscess of the breast, without exception.

2. Free the abscess of purulent matter as completely as possible, and by various means: cups, water-dressings and expulsive pressure.

3. Re-unite them by first intention whenever it is possible.

4. When primitive re-union is not obtained, establish in the orifice a canula in Y, or a perforated seton, and wash every day the seat of the disease in dressing with cataplasms.

5. Gradually suppress the canulas by progressive shortening and by intermitting their employment.

This is our therapeutic basis. As it is very important to designate precisely the nature of each particular case among those to which our method of treatment has been applied, it is necessary to make known especially how we classify abscesses of the breast, so that we can tell from each observation to what category they belong.

Dividing, then, into two groups all abscesses of the breast to which we have applied our means of treatment, taking it for granted that primitive re-union has been obtained, or that the

abscess has re-united only secondarily, we will indicate the different varieties in each of these groups to which each of the abscesses treated belongs.

Abscesses of the breast, on the history of which the wise researches of M. Le Dr. Velpeau have spread a bright light, can be divided into two grand classes. 1. Abscesses exterior to the gland. 2. Abscesses which have their seat in the body of the gland itself. Of the former, there are two principal divisions: the peri-mammary and the endo-mammary abscesses. As these denominations may confound some readers by the simple fact of their strangeness (for in the end they appear the same), we will use often, as synonyms, designations of extero and intero-mammary, which have the advantage at least of shunning all equivocation.

Peri-mammary abscesses are divided into—1st, sub-cutaneous; 2d, sub-glandular. Sub-cutaneous peri-mammaries are divided into simple phlegmonous peri-mammary, lymphatic peri-mammary, and diffuse peri-mammary.

The sub-glandular peri-mammaries are, some simple phlegmonous, others hygromatic—that is to say, having their seat in the sub-mammary serous tissue—some others are cold abscesses depending on osseous alterations subjacent to the mamella. Intero-mammary abscesses comprise—1st, canalicular intero-mammary (an abscess communicating with the lactiferous conduits, T.); 2d, interlobular intero-mammary. These divisions which have been presented, comprise every variety of abscesses of the breast. If, however, the most of these have been established for a long time by clinical observation, there are others which need to be confirmed and rendered clear by precise facts.

The peri-mammary, sub-cutaneous, angioleucitic abscesses, constitute one of the most common varieties of abscesses of the breast. This variety is clinically distinguished by the following characters: erratic rigors, announcing the début of the affection, redness of the mamella disseminated in irregular plates corresponding to the painful *cores*, accompanied by a relief more or less marked at the exterior; well defined stripes

or reddish lines leading from the breast toward the axillary region; painful engorgement in the axillary ganglion, sometimes even the existence of a ganglionic chain; then, when to a phlegmonous core has succeeded an abscess, we have a tumor of a conoidal aspect and movable base, regularly circumscribed and independent of the gland. The simple phlegmonous perimammary abscess forms a variety well marked, which is known by the following symptoms: pain, tumefaction, heat and redness, more or less intense; formation on some point of the mamella of a prominence corresponding to that portion of the breast the reddest and most painful; considerable quantity, generally, of purulent collection, which attains in bulk sometimes the size of the fist, and which is habitually separate from the surrounding mass. It is an exception to see two, three, or even a greater number of simple phlegmonous abscesses appear on the mamella.

The diffuse phlegmonic peri-mammary has well marked characters, which prevents the possibility of its being confounded with any other species of abscesses of the breast. It begins by lancinating pains and very acute tensions, which give to the invalid a sensation of violent constriction across the mamella; diffuse erythematous or erysipelatous redness covering the surface of the breast; rapid enlargement of the whole organ, which swells like a sponge, during which time the pulse becomes small, feeble and depressible; very speedy accomplishment of the work of suppuration; perforation of the skin in various points and discharging freely through the orifices which result therefrom, mortified adipose cellular tissue, and filled with a lactescent pus; finally, the easy possession of all the sub-cutaneous cellular tissue of the mamella, and dissection of this gland by the consecutive mortification of the invaded parts. The sub-glandular or postero-mammary abscess comprises equally that species which, clinically, it is easy to distinguish. For example, we recognize phlegmonous postero-mammary by the following symptoms: considerable swelling of the mamella; a swelling, in consequence of which the gland appears to be separated from the anterior part of the chest—a

swelling occupying the entire mass of the organ, instead of bordering on parts more or less circumscribed; dull, heavy pains; skin hot, tender, sleek, glistening, slightly red and furrowed by large venous trunks; the breast seems to repose on a spongy cushion, when pressure is made from forwards, behind (Velpeau); general phenomena, such as rigors, fever, malaise, weariness, headache, etc.; rapid march of accidents, which may attain, in a few days, their maximum intensity; the mamella has been known to acquire, in twenty-four hours, double its normal volume. If a purulent collection is formed, we observe an œdematous base, having its seat sometimes in the surface, sometimes in the periphery of the mamella. It is difficult to determine fluctuation. Compression exercised on one part of the breast may cause the purulent liquid to flow to an opposite point, but we rarely find the precise and characteristic sensation of fluctuation. If, in this case, we explore the breast anteriorly, the perception of it may appear doubtful, because the movement of fluctuation is complicated with the balancing motion of the gland on its liquid seat, before which it is placed, and because fluctuation is only perceived through the entire thickness of the mamella. It is by seizing the breast *en masse*, and pinching together the lateral parts—then by executing an alternate movement of longitudinal and transverse pressure—we perceive fluctuation very evidently. We may be deceived, even, in exploring with a trocar if we plunge it directly from front to rear, because then it is necessary to traverse the entire thickness of the gland, and if it stops at an insufficient depth, the exploration fails in its aim and we may still misconstrue the nature of the tumor.

The symptoms of hygromatic postero-mammary are nearly the same as those of the phlegmonous postero-mammary; swelling of the breast; considerable volume of the organ; œdematous foundation, sometimes at the surface, sometimes on the periphery; obscure fluctuation. Generally, if pressure is made on the breast from before, behind, it is readily perceptible that it resposes on an elastic base. It is especially to this variety of abscess we must refer that rapid tumefaction of the

mamella which doubles the volume of the organ in a short space of time. As for the cold postero-mammary abscess, dependent on osseous alteration of the thoracic walls, or even on an affection of the organs contained in the cavity of the chest, it constitutes a variety very distinct from the preceding divisions of abscesses of the breast, the characteristics of which we have seen fit to point out.

We have now arrived at intero-mammary abscesses. It is, we remember, in this group we have placed the canalicular and interlobular. Now this division will be very easily explained. The following are the symptoms by which we can recognize canalicular intero-mammary abscess: the mamella is hard, unequal, and rugged on its surface. Sometimes it presents a certain degree of mobility; but then the hand which explores it feels in the middle of the mass always swollen, engorged cores, globules of pus more or less hard, and more or less voluminous. The skin is tender and presents a redness, or at least a rose tint. The mamelon is retracted, the milky secretion suppressed. The affected part is the seat of a burning heat and of pulsating and lancinating pains, which are sometimes felt in the corresponding axilla. If an incision be made into the tumor, a milky flow of pus and and blood follows; there is sometimes seen, in certain cases, to issue through the orifices of the sieve-like mamelonary extremity, a liquid precisely similar to that furnished by an artificial opening.

The most characteristic sign of this species of abscess is the exit of pus by the lactiferous conduits, when pressure is made by means of cups over the orifices which the mamelon presents. As the last demonstrative method of canalicular abscess is little known, and as all which belongs to this variety is generally designated by authors under the name of filamentous (*poil*) abscess, or inflammation *en masse* of the lacteal ducts, we will instance a case in which the diagnosis has been rigorously established by the aid of cups. It is as follows:

Grapinet (Apolline), 18 years old, enceinte for five months, first pregnancy, entered the hospital of St. Antoine, 11th of

February, 1853, for an abscess situated on the left breast, dating back three weeks. Before opening the abscess, I applied over the areola a cup, which occasioned the issue of a purulent matter perfectly recognizable. We learned later, after the opening of the abscess, that an easy communication existed between the conduits of the mamelon, which had furnished the pus, and the interior of the *focus* of the abscess, for this reason: that water injected in this focus returned by the conduits of the mamelon. This is an example of what we call canalicular abscess, which, during the state of lactation, was known by mixture of milk with pus at the moment the abscess was opened, and which in a state of non-lactation is only recognizable by the issue of pus by the ducts of the gland. There are then two modes of possible demonstration for canalicular abscess. 1st. (When milk does not exist), by the issue of pus through the natural orifices of the mamelon. 2d. (When there is lactation), by the presence of milk in the abscess. The sign of the presence of milk is of little importance as regards canalicular abscess. When the abscess opens itself spontaneously, or even when it occupies a very superficial and thin-walled mammary lobule; for when the abscess is deep, and when it is opened by the bistoury, it is always possible to admit that the instrument opened the lacteal canals, and permitted after the stroke, the milk which was not primarily mingled with pus, to mix with it at the moment. The characters of interlobular intermammary abscess, are less marked. In the commencement, the appearance in the thickness of the mamella of one or more cores of disseminated engorgement, painful, accompanied by a redness more or less vivid, less uniform always than in the simple circumscribed sub-cutaneous peri-mammary abscess. The manifestations of pain are very varied. The duration of the malady is difficult to determine on account of the facility with which the phlegmasia passes from one lobule to another. When suppuration is formed, we see, to the *cores* of disseminated engorgements, to succeed contractions which pucker the external tegument, making it thin, breaking it up, and presenting an evident fluctuation.

The whole mamella does not participate ordinarily in the fluctuation which we observe on one or more points. The breast does not appear to be separated from the chest. As a character distinctive of canalicular abscess, no lacteal secretion can be found in interlobular abscesses. The fact of immediate re-union, directly after opening and washing the abscess, is something so unexpected, we may say, so improbable, that in order to verify it, we must demonstrate it by numerous and well observed facts. We will then offer only what appears to us really necessary, in relating those cases in which this result has been obtained. We hope that in view of the aim we seek to establish, the reader will pardon us the weariness attached to a succession of a long series of observations. We would call his particular attention to the manner in those cases in which primitive re-union has been obtained for those abscesses containing milk, and which in every case involve directly the tissue of the gland and the lacteal ducts. We will present the series of these observations in the same order which we have adopted for the classification of abscesses of the breast. The first observations, therefore, concern the peri-mammary abscess.

The following are some of the cases reported by Dr. Chassaignac :

Simple, circumscribed sub-cutaneous abscess of the breast; water dressing; ‡ occlusion; primitive re-union.

OBSERVATION I. Marianne Reton, aged twenty-three years, wife of a gardener, Road to Lagny No. 48, entered the hospital Saint Antoine, July 1st, 1850. This woman had been a wet-nurse for eight months; she was generally very healthy. For eight days her breast had been painful, without any known cause; but afterwards, to these unknown causes had been added a blow from a piece of wood on the anterior portion of the shoulder. The first day we applied cataplasms on the breast, at the inferior part of which there was an abscess about the size of a hen's egg. The next day, July 2d, a puncture was made with a lancet in the centre of the collection. After

‡ By injection.

compressing it to expel the enclosed pus in the abscess, several injections of warm water were thrown into the cavity, and as soon as the injected liquid returned with a perfect limpidity, treatment by occlusion was adopted. July 4th, we removed the dressing. No sign of pus could be found. The small wound was entirely cicatrized. The woman, finding herself so well, wished to go out. She left the hospital July 5th.

In the course of these researches, a duty is imposed upon us, always to keep the patient a sufficient time to test the permanency of the cure, but the transition from a state of pain to a state of tolerance is so rapid in a case of complete success, that it is not always easy to retain in the hospital a patient who believes herself perfectly healed. Our orders to return for consultation, if there be a return of the least accident, are always imperative enough to make us think that these patients, nearly all residing in the vicinity of the hospital, and who leave us on good terms, would not hesitate to come to see us if anything happened to them, so that we may regard their non reappearance as a moral if not a scientific proof, assuredly, of the permanency of their cure.

Sub-cutaneous phlegmonous abscess of the breast; water dressing; occlusion.

OBSERVATION II. Julie Devaux, aged twenty-six years, wife of a laborer, Saint-Margaret st. No. 10. Entered bed number ten, hall of St. Martha, Dec. 17th, 1850. This woman had been confined seventeen months previously, and weaned her child three months before entering. At this time she had done nothing to facilitate the absorption of her milk; yet she was not suffering at the time of her entrance into the hospital Saint Louis, where she was being treated for the itch. For fifteen days very severe pains had been felt in the right breast. Cured of her skin disease, the patient left the hospital Saint Louis eight days since. The pain in her breast increasing greatly, she entered the hall St. Martha, December 17th, 1850. We discerned fluctuation in the breast, but the pus, instead of being collected in a circumscribed sac, appeared to be dissemi-

nated over the surface. On the 20th of December four small punctures were made; one of them brought out pus well marked. We made a larger opening and obtained a very considerable quantity of pus. We bathed the seat of disease carefully with the aid of the hydrocele syringe, then treated by occlusion. On the 21st of December the wound was perfectly united in all points. The internal face of the straps presented no sign of pus. On the 24th, cicatrization was complete, and the patient left the hospital perfectly cured.

Simple circumscribed sub-cutaneous phlegmonous abscess; incision; water dressing; occlusion; primitive re-union.

OBSERVATION III. Marie Dufour, aged thirty-seven years, seamstress, Montreuil st. No. 27. Entered the hospital Saint Antoine the 12th of November, 1853. For about two months this woman had experienced a chilling sensation at the time of her menstruation. A very bad eruption had appeared on the abdomen soon after. For some days the patient had felt in the left breast continued pains, lately becoming throbbing. At the same time these pains were followed by chills, and to-day, Marie Dufour experienced a feeling of heaviness in the superior portion of the breast. In this point there is a well circumscribed fluctuating tumor. An incision is made; a great quantity of pus flows. Two detersive douches; poultice. Nov. 14th: The patient no longer suffers. Pressure made on the breast is not at all painful. We carefully raise the poultice. There is a secretion of plastic lymph; no pus; poultice again. Nov. 16th: We raise the dressing. A little plastic lymph, less thick, less consistent than on the previous evening. No trace of pus or inflammation around the wound. Poultice. Nov. 19th: There is still a little plastic lymph; perfect re-union in every part of the wound. Nov. 21st: The patient leaves the hospital entirely cured.

Here, as in the preceding observations, primitive re-union perfectly succeeded, with this difference, that the internal face of the poultice, instead of being at the moment of the removal of the dressing completely exempt from moisture, presented a sort of *magma*, formed by a certain quantity of consistent

plastic lymph. We may then say of primitive re-union, in the first case, that it is *dry*; in the second, that it is accompanied by a *lymphatic magma*.

Multiplied angioleucitic abscess of the right-breast; water-dressing; occlusion; primitive re-union, with bloody lymphatic magma.

OBSERVATION IV.—Jeanne Prudon, wife of a gardener, aged twenty-five years, Reuilly St., No. 8, entered bed number four, hall of St. Paul, February 17th, 1851. This woman had been confined two months previously, and nursed her child. She had, in her right breast, very painful multiplied abscesses, some of which were very deeply seated. Feb. 21st: I make several incisions, from which issues pus, mixed with blood, but exempt from any sign of milk. Brisk cupping. Bathing by recurrent injection. Occlusion. The cause of these abscesses, which I consider as purulent angioleucitic collections, appears to reside in cracks, two in number, and very painful, situated at the base of the nipple. For four days it has been impossible to give the right breast to the child. Sensibility is lessened very soon after the operation. Feb. 22d: The patient continued to suffer one or two hours after the operation; after which the pains were completely assuaged. To-day there is no sensibility, not even under a very strong pressure. Feb. 23d: We raised the plaster. Under it we find a little bloody lymphatic magma, on a level with the two wounds, which are neither irritable nor inflamed. We re-applied the straps, adhesion not yet being sufficiently solid. Feb. 27th: One of the wounds is perfectly cicatrized; the other lets escape some drops of pus which do not appear to come from the abscess, whose walls are grown together, but only from the edges of the incision. M. Vernois having drawn out, by cupping, a little milk from the diseased breast to analyze it, re-opened a little the cracks.

The observation stops here, because the patient, not being in our service, has not been seen by us since. The reader will understand that we cannot attach to this observation the same value as to those in which an account was given of the permanency of the cure, tested at the end of several weeks. We

have, however, thought best not to put it aside, because it brings out some points of great importance in the new therapeutic attempts to which we have devoted ourselves; these are, 1st, the immediate and complete cessation of pains; 2d, the almost absolute absence of inflammation the day after the operation; 3d, the entire success of an attempt at an immediate re-union, which, if not even accomplished, leaves the patient in a condition eminently favorable, and shortens much the duration of a secondary re-union.

Angioleucitic abscess of the right-breast in a man; water-dressing; occlusion; complete re-union at the end of two days.

OBSERVATION V.—Francis Joseph Guiland, aged 31 years, of Bercy, entered the hall St. François—bed number ten—June 15th, 1852. June 16th: Twelve days ago the patient left the ward of M. Guéneau, where he had been treated for pleuropneumonia by cupping and blistering. Eight days after, probably on account of the irritation caused by cantharides, the right breast took on an acute sensibility; a phlegmonous abscess was formed, and consecutively the axillary ganglia were hypertrophied and became painful. The appearance of this patient resembles that of men who have been subjected to paludal influence. Nevertheless, it did not appear that there had been any intermittent casualties. It is necessary to say, in this connection, that the patient worked in cess-pools. Evacuation of the abscess, water-dressing, occlusion. This abscess is deserving of attention, because it may serve to explain how diseases of the breast are produced among certain women who have always on the teguments of the base of the breast chafings caused by the pressure of corsets. June 17th: By pressure, several drops of reddish pus flow out, but there is a remarkable tolerance on pressure. June 18th: A complete re-union of the lips of the wound. Variola followed, which offered no obstacle to the healing of the abscess, for the periphtric engorgement had almost completely disappeared, and the edges of the incision were well re-united.

All the cases which have just been related, belong to the

class extero-mammary abscesses. The observations which follow relate to intero-mammary abscesses united equally by first intention. We will commence with interlobular intero-mammary abscesses.

Interlobular abscess of the right-breast; water-dressing; cupping; occlusion; re-union by first intention.

OBSERVATION VI.—Marie Gilet, modiste, aged twenty-two years, entered the hospital Saint Antoine, August 6th, 1853. The patient was confined two months ago; she presents to-day in the right-breast a collection of pus of eighteen days' duration. Aug. 7th: We place the patient under the influence of chloroform, and open the abscess, which seems to be deeply seated in the parenchyma of the gland. Yet the pus is not mixed with milk, and the milk flowing from the nipple is not mixed with pus. (Water-dressing, cupping, occlusion.) Aug. 8th: The patient has again felt some pains. Aug. 9th: Complete cessation of pains. We raised the dressing, which presented on its internal face only a bloody lymphatic magma, without any sign of pus. Re-union by first intention was complete. We replaced the straps. Aug. 14th: Perfect cicatrization. Aug. 15th: The patient left, cured.

What makes us place this abscess in the class of those we designate under the name of interlobular, is the complete absence of traces of milk in the pus of the abscess. It is necessary to remark that the patient had been recently confined, and it is then perfectly admissible, that if the abscess had entered the galactophorous canals or canaliculæ of the gland, there would have been a mixture of milk with the pus. We believe then that always, when in similar cases we find no indication of the presence of milk in the abscess, and when, on the other hand, aspiration practised on the nipple by cupping does not bring any pus, it is very probable, even certain, that the purulent collection is seated in the cellular interstices which separate the lobules of the gland.

In respect to interlobular abscesses, we must remark, that a certain number of them must be angioleucitic; but as it is

almost impossible to demonstrate clinically this origin, although we may do so in regard to sub-cutaneous angioleucitic, we can admit the existence of interlobular angioleucitics only by anatomical induction. Finally, not only do lymphatic sacs exist on the surface of the gland and under the skin, but there are also traces of lymphatic vessels which penetrate into the interstices of the lobules, as appears resulting in the works of M. Sappey. It is evident, in this case, that new clinical researches are indispensable.

Interlobular abscess of the right breast and extero-mammary angioleucitic abscess of the left breast; cupping; water-dressing; occlusion; re-union by first intention.

OBSERVATION VII.—Antoinette Arn, twenty-four years of age, wife of a laborer, Bonne Nouvelle Boulevard, No. 8. Entered the hospital St. Antoine June 27th, 1853. This woman, confined one month since, has had for twenty days an abscess on each breast. The abscess of the left breast is extero-mammary and angioleucitic; it occupies the external and superior side of the gland. Fluctuation is very easily perceived. The patient says she has had fissures on the nipple and ganglionic swellings in the axillary region. (Opening; water-dressing; occlusion.) In the right breast, the abscess occupies the central part of the mamella, which is hard and painful. The pus appears deeply seated. It does not swell the areola or the nipple. An incision brings a considerably greater quantity of pus than one would suppose. The purulent liquid is mixed in some points with blood, which assumes little blackish clots. After having made methodical pressures on the mamella to expel the pus, we cleanse the sore by repeated injections, and apply the bandage. June 29th: Complete absence of pain and fever; general state good. June 30th: We raised the bandage. Total absence of pus. The breasts are still hard. July 3d: Some pains, accompanied by itchings in the breasts, without the least trace of suppuration. July 9th: A tumefaction has formed in the left breast, which is the seat of sharp, lancinating pains, so we are obliged to make an

opening, and apply cups in order to draw away a certain quantity of lymphatic liquid. Occlusion. July 14th: The bandages having been removed, we found two soft breasts, except an induration of the size of a small nut, in the superior and internal part of the mamella. Besides this, there is no sign on the interior face of the bandage, of the last exudation. July 24th: The patient goes out cured, except a slight induration which is still observed in the left breast. She has been presented to the Surgical Society, August 2d, 1853, completely cured.

We recognize in this case the undoubted existence of an angioleucitic abscess of the left breast. There were engorged axillary ganglia, and the abscess was situated on the passage of the lymphatics comprised between the nipple and axilla. It presented also, in its appearance, other characters proper to angioleucitic abscesses. On the right side the abscess was seated very deeply in the mamella, so as not to exclude all idea of a sub-cutaneous phlegmon.

When in a case of subcutaneous abscess, either angioleucitic or simple phlegmonous, we obtain by the aid of water injections and occlusion an immediate re-union, this result is assuredly very beautiful; but it can be foreseen up to a certain point, as we have so often demonstrated in other regions of the body. But when in milky abscesses, and when the galactopherous conduits are, or have been in direct communication with the interior of the purulent sore, a primitive re-union is obtained, it is something so new and surprising as to arrest forcibly the attention of the practitioner. Theoretical ideas might never have foreseen such a result, and clinical experience has often failed in many instances to confirm the reality of it, in order to embolden us to persevere in this way.

Canalicular abscess of the left breast; water dressing; occlusion; re-union by first intention.

OBSERVATION VIII.—Marguerite Jagus, aged 32 years, domestic, entered the hospital Saint Antoine, January 25th, 1854. This woman has an abscess of the left breast, which

first made its appearance about three weeks since, and which seems to be seated in the very interior of the mammary gland. Jan. 25th: Opened the abscess. A considerable quantity of whitish liquid flowed from it, composed of pus and milk, as a microscopic examination showed. Cupping and detersive douches. We cease the injection only when the liquid returns limpid. Treat by occlusion. Jan. 27th: The patient no longer feels pains in her breast, even on pressure. Jan. 28th: Complete absence of pains; there is yet a little engorgement of the breast, but no suppuration. The lips of the wound are re-united. We re-apply the bandage. Feb. 3d: Remarkable diminution of the engorgement. General state very satisfactory. Feb. 20th: Perfectly cured.

(The following are the conclusions to which Dr. Chassaignac arrived in summing up those cases which we have given. T.)

1st. Immediate re-union may be obtained in every form of abscess in the mammary region, except in the diffuse phlegmon.

2d. The success of immediate re-union, after opening an abscess of the mammary region, is more difficult than in many other parts of the body.

3d. The means by which we may obtain immediate re-union after opening an abscess of the breast are the following:

a. Open the abscess as soon as fluctuation is discovered.

b. Complete detersion of the seat of disease by expulsive pressures, aspiration by means of cups, abundant and continued injections with tepid water.

c. Treatment by occlusion.

4th. We must watch very attentively the state of sensibility in a breast on which we have attempted an immediate re-union after opening the abscess.

5th. Attempts at immediate re-union incur no danger, even when they fail, but with this proviso, they must be directed with prudence, without obstinacy and in conformity to the plan we have adopted.

6th. In a case where the operation which is attempted to obtain primitive re-union threatens to be difficultly sustained by the patient, we must have recourse to chloroform.

SECONDARY RE-UNION.

The treatment which consists in an attempt at immediate re-union immediately after opening the abscess of the breast, not only has many advantages, giving place in a certain number of cases to very brilliant results, but even when primitive re-union fails, of leaving things in a more favorable state for a much more speedy secondary re-union than can be obtained by any other method. When we discover that secondary re-union can only be attempted, the mode of treatment must be modified in the following manner:

Introduce in each of the orifices a canula in Y. and make each day, and even twice a day, injections of tepid water. Cover the breast with cataplasms which are kept soft and moist by means of gummed cloth. In more severe cases, those for example, in which the abscess is postero-mammary, the use of a perforated seton, together with numerous injections, has resulted more favorably in sparing our patients the more or less painful operations which have been proposed for sub-mammary abscesses. In this respect, we must remark, that all these operations may be done away with, by a single incision, on condition that it be made on the most inferior part, and a little external of the mamella, so as to allow always a free efflux to the suppuration which is formed under the gland. It is well understood that a surgical drainage by means of canulæ of caoutchouc and a perforated seton, is strictly necessary here.

Among a great number of observations of abscess of the breast, treated by our method, viz: opening as soon as possible, daily injections, canulæ in Y, and perforated setons, we have never seen the disease continue for entire months, as we have so often found to be the case in observations of abscess of the breast treated by ordinary methods. Three months duration, for example, for an abscess of the breast, and its sequences, is the longest known in our service since we have had recourse to the method of treatment just explained.

Among the numerous examples which we have of secondary re-union, we will relate a few, calculated to make the principle

of the method which we have followed and the mode of its application, better understood.

Simple circumscribed sub-cutaneous phlegmonous abscess of the right breast; opening; water dressing; occlusion; second incision of the lowest portion; canulæ in Y; cure.

Augustine Vassel, aged seventeen years, Haies St., in Charonne, gardener's wife, entered bed number 18, hall St. Martha, 24th of August, 1850. Six weeks before her entrance into the hospital, the patient received a severe blow on the right breast. From that time, the breast has not ceased to be painful. The patient, now and then, has very sharp twitches through it. On the arrival of the patient, we observed a red and painful tumefaction of the breast, with very distinct fluctuation. August 25th: We made an incision in the central part of the swelling, from which flowed a considerable quantity of pus, well marked. Afterwards we carefully bathed the interior of the abscess by means of a water injection which occupied a long time. The pain moreover was so great that we thought it best to have recourse to chloroform. Treatment by occlusion. The arm was held up against the breast by long bands of plaster. Aug. 29th: Raised the dressing, which was covered with a great quantity of pus. The abscess was refilled by suppuration. Thinking then that the small punctured opening was insufficient, we enlarged it, and also made a second incision on the lower portion of the abscess, passing a thin, narrow strip of linen from one opening to another in the manner of a seton. September 4th: The patient is better. Pus has escaped from the two openings, pus mixed with plastic lymph. After the second operation we treated with cataplasms. Sept. 7th: Pus flows very freely. We substitute for the seton two tubes of caoutchouc in Y. Sept. 9th: A flow of lymph only, perfectly limpid. Sept. 17th: The cure is complete. The patient leaves the hospital.

A traumatic cause, a well circumscribed abscess, not very voluminous, the youth of the subject, the absence of everything relative to the phenomena of lactation, constituted in

this particular case every condition the most likely to insure success. So then, non-success proves to us, in cases of abscess of the breast, whatever may be the cause, there are less chances of immediate re-union than in any other kind of abscess.

Diffuse sub-cutaneous phlegmon of the two breasts; multiplied incisions; water-dressing; canulæ in Y; cure at the end of a month.

OBSERVATION II. Catherine Rosal, aged 23 years, Pearl St. No. 22, entered bed number 19, hall St. Martha, Aug. 3d, 1852. The patient was confined one month since. Eight days after, the right breast became diseased, the left breast a few days later. Abscesses were formed in the thick part of the gland. In the right, the whole mass of the breast was converted into one vast purulent collection; in the left, the abscess although considerably less, is still very extended. Multiplied incisions were made on the right breast, which already presented some ulcerated perforations, but altogether insufficient for the issue of the enormous quantity of pus which existed there. In the same way we opened the left breast by incisions. Actions very much altered, prostration, pulse small, feeble, depressible. Injections; cataplasms.

Aug. 5th: Very sensible amelioration in the general and local state. Pus continues to flow through the incisions. Canulæ in Y in both breasts; cataplasms. Aug. 9th: Suppuration is diminished in both breasts, but particularly in the left breast. We shorten the canulæ; cataplasms. Aug. 15th: General state good. Suppuration is nearly dried up in the left breast. It still continues, but very feebly, in the right breast. We remove the canulæ in Y in the left; we shorten them in the right; cataplasms. Aug. 20th: Complete cicatrization of the wounds in the left breast. There is still a little suppuration in the right; cataplasms. We remove the canulæ entirely. Aug. 23d: Suppuration has completely ceased in the right breast. The cure of the left breast is affirmed. The patient has regained strength, looks well; she eats three times a day. Aug. 30th: A new inflammation is produced in the

right breast, which makes us fear for a moment the formation of other abscesses; but simple softening applications have sufficed to prevent accidents. There remain on the right breast only a few fleshy pimples, which will not certainly retard cicatrization. Sept. 10th: The patient leaves entirely cured.

The rapidity of the cure in the case just related, is the more surprising, as it had to deal with a diffuse sub-cutaneous phlegmon of the breasts, an affection always serious, not only by the local disorders which it has as its sequelæ, but also by the dangers to which it exposes the patients. We know, also, that in the diffuse phlegmon of the breast, suppuration is propagated with an extreme rapidity, when it does not, at the commencement, extend over the whole of the organ; we know that multiplied holes are formed in the skin; that the celluloadipose tissue mortifies, and it can then be detached and extracted by pieces; that a complete dissection of the mamella results; that death, finally, may follow, if art does not intervene very promptly to arrest the progress of the disorder. In this case, we must remark that both breasts were invaded with this dreadful affection. Deep and multiplied incisions, in one part, repeated injections and canulæ in Y in the other, in a few days moderated the violence of the accidents in facilitating the disgorgement of parts infiltrated with pus, and in less than a month effected a complete cure.

Interlobular abscess of the right breast; incision; water dressing; occlusion; fruitless attempt at primitive re-union; use of canulæ; intercurrent erysipelas; gradual shortening of the canulæ; cure.

OBSERVATION III.—Augustine Garnier, aged nineteen years, embroiderer, entered the hospital Saint Antoine, March 22d, 1853. This patient has in her right breast a large abscess, of about two months and a half duration. At this time, she received a blow on the breast. The nipple of the diseased part seems to have disappeared, so much is it depressed. At the internal part of the breast are seen two fistulous orifices, through which the pus contained in the sack flows out. On the external part, we observe a soft, fluctuating mass, at the

level of which the skin is thinned. We plunge the bistoury in this point, and about a glassful of pus flows from the incision. The depth at which the sac is situated, leaves no doubt that it is situated in the parenchyma of the gland. On the other part, the total absence of whitish stripes and milky clots, leads us to think there is an interlobular abscess here. Injection; cupping; occlusion. In order to practice the operations of cupping and injection, which are generally very painful, we resorted to the use of chloroform. May 25th: To-day we can press on the diseased breast, and even percuss forcibly on the dressing without causing pain. Tongue white. Seidlitz powder. May 29th: We raised the bandages. The walls of the sore are re-united by first intention. No sign of pus. May 30th: Rigors. Abscess re-formed. Pus flows through the incisions. Canulæ; cataplasms; sulphate of quinine; tincture of aconite. June 2d: Erysipelas extends from the diseased breast to the corresponding arm. Suppuration continuing, we make the canulæ as long as possible. Seidlitz powder. June 5th: Suppuration still continues very abundant, and flows freely. Erysipelas still continues. June 8th: Diarrhœa, abdominal pains, painful respiration, thirst, tongue white. Pus continues to flow. Seidlitz powder. We shorten the canulæ. June 12th: General state better. Suppuration considerably diminished. June 20th: The purulent discharge has nearly ceased. The patient eats twice a day. Suppression of the canulæ. June 27th: Complete cicatrization of the fistulous openings. July 8th: The breast has returned to its normal state. Complete cure.

Complications so serious, and above all, erysipelas happening during the course of this abscess, were of a nature to make its duration appear much longer than it was in reality. A similar abscess might last three months and more, as we have often had examples. We must not forget that the duration of the disease may be shortened by a continued use of means proper to facilitate a free, constant flow of pus.

Canalicular abscess of the left breast; incision; water dressing; occlusion; cure at the end of a few days.

OBSERVATION IV. Marie Guillaume, aged twenty-three years, domestic, entered the hospital Lariboisierè, April 29th, 1854. This woman confined one month since, at the hospital of the Clinics, ceased nursing her child on account of fissures coming around the nipples of both breasts. Although these fissures produced no ganglionic engorgement of the axillas, they seemed to have been the point of departure of accidents, inflammatory at first to the right breast then to the left breast.

At the time of the entrance of the patient into the hospital, an abscess on the right breast had been opened in the city, no trace of which remained except a little painful induration of the inferior hemisphere of the gland, but another very painful abscess existed in the left breast and caused a slight swelling of the teguments at the level of the areola; fluctuation is only perceptible at this point. April 30th: a long puncture of a centimetre is made with a straight bistoury; it brings a flow of creamy and well marked pus, mixed with milk and lumps of cheesy matter. The considerable quantity of this liquid is no way connected with the very moderate swelling under the skin. A douche is thrown into the seat of the disease with an irrigator containing about a quart and a half of tepid water, then a piston pump applied on the puncture brings out the liquid still remaining in the sac, the detersion of which is completed by a new douche, followed by a new application of the cups. After these different operations which cause great pain to the patient, we treat the wound by occlusion. An hour after the pains had nearly ceased, not only those produced by the operation, but also those which were manifested spontaneously at the time the patient entered the hospital. April 30th and May 1st: This state of calm still continues. May 2d: A few darting sensations make us fear that all the pus has not been expelled; we raise the dressing and by a mild pressure on the sore cause a small quantity of purulent matter to flow. A new douche is thrown into the sac, but we no longer apply the cups;

then a dressing by occlusion is re-established on the wound, and held there by a band which exercises a moderate compression on the mamella. In the evening there is a slight return of pain; with great care we remove the dressing on which we find a little plastic lymph escaped from the sore; but pressures made on all sides of the sore do not cause the least quantity of pus to flow; the dressing is again applied. After this time there was no pain either spontaneous or by pressure, and on the 11th of May the patient quitted the hospital, completely cured. The painful induration which was seated in the right mammary gland was in a speedy process of reduction.

A study of the works published by M. Velpeau (page 190 to 197 of his *Treatise on Diseases of the Breast*) shows that the abscesses which he calls glandular, are comprehended by us in two varieties: the interlobular and canalicular have a less duration, though generally speaking the course is quite long. We may then remark, that the cure of the abscess, the history of which we have just given, is singularly shortened by the therapeutic method adopted.

Certain notes taken by M. Velpeau in the works he has published, show us concisely how rapid the cure has been in each particular case, (to wit):

Glandular abscess of both breasts, 24 years, shirt-maker.	Cure in 38 days.
“ “ “ right breast, 26 years, seamstress.	Cure in 25 days.
“ “ “ left breast, 20 years, seamstress.	Cure in 43 days.
“ “ “ left breast, 25 years, cook.	Cure in 19 days.
“ “ “ both breasts, 20 years, shop-keeper.	Cure in 35 days.
“ “ “ right breast, 50 years, shop-keeper.	Cure in 18 days.

[The following are the conclusions arrived at by Dr. Chassaig-nac in his Second Part. T.]

The facts which we have reported of these abscesses, far more numerous than I had anticipated placing in this work, give us the following results:

1st. That we can singularly abridge the duration of abscesses of the breast, even of those which are by good right considered the most rebellious.

2d. Not only may we shorten the duration of these abscesses, but we may even prevent their extension and recurrence, the means of which we have explained in the first part of this work on the primitive re-union of abscesses of the breast.

3d. The means by which we obtain these remarkable results are as follows :

a. As soon as we discover the impossibility of obtaining primitive re-union, we make a vigorous injection into the purulent cavity.

b. We place in the interior of this cavity a canula, not of that kind proposed by our excellent teacher, M. Cloquet, and which by their consistency, although they are called *elastic* canulas, are supported badly by the inflamed tissues, but rather perfectly supple tubes of caoutchouc, one extremity of which we carefully fashion like the mouth-piece of a flute (or flageolet), whilst the other extremity, divided into two parts is maintained by bands of diachylon.

c. Each day water-dressing, by injection into the cavity of the abscess is practised, also cleansing of the canula and its replacement.

d. Cataplasms of flour, meal or ground rice, mixed with a certain quantity of oil of sweet almonds, then covered again with gummed cloth, constitute the treatment.

e. Gradually suppress the canulas by shortening little by little the portion of the tube which is introduced into the wound, then insert the canula every alternate day, before removing it altogether.

[This finishes the admirable and concise treatise of M. le Dr. Chassaignac, on Abscesses of the Breast. Since the appearance of this work, (in 1855), I have seen many cases successively treated by the Doctor in the wards of the hospital Lariboisierè. His method of treatment remains the same now as in 1855.

T.]

Céphalotripsie Répétée on a Rachitic Woman. Translated from the *Moniteur des Sciences Obstetriques*, April 3d, 1860. By G. W. BRIGGS, M. D., Richmond.

M. PAJOT has practised again, à l'Hôpital des Clinique, where he replaces Professor Dubois, the operation of cephalotripsie répétée, a method which counts already a sufficient number of successes in order that it may be followed generally in a large class of cases where formerly we have had recourse to the Cæsarian section. We give a resumé of the facts such as they occurred.

CASE.—On the 12th of March there was brought to The Clinic, a woman aged about twenty, very small, rachitic and badly made. She said herself, that she had been very slow in growth from childhood, and had not walked until four years old. Her pelvis, measured before her departure from the hospital, gave a diameter of two inches.

When brought, she had been in labor for thirty-six hours ; she was of a family not in very bad circumstances. When the pains of labor first came on, they had called to her a mid-wife, who had soon demanded the aid of a doctor ; they called then one after another, four the first day, then successively six others the second day. The mother of the patient herself relating these facts. None of the doctors wishing to have charge of a case so difficult, they decided to have her carried to The Clinic. The state in which she was then found was not extremely unfavorable, as regards her general condition. The patient was, without doubt, fatigued, but the pulse was good and her moral condition was calm—she was resolute. The child presented by the head. The pelvis was, as well as we could judge, of an excessive narrowness. We say as well as we could judge, for we could not estimate it except by approximation. In fact, the vertex was lengthened and thrown below the superior strait, a circumstance which prevented the finger from touching the sacro vertebral angle. At the first examination, M. Pajot estimated the diameter at between four and six centi-metres.

Subsequently we found the measurement, by accurate examination to be only five centi-metres. It was evidently quite impossible to hope for a delivery without an operation. The child was dead. M. Pajot resolved to put in use the operation for the fourth time, which he had been the first to propose; which he now commenced, and which he designated under the name *céphalotripsie répétée*, and which eminently differs from that generally employed. Until now, in order to perform cephalotripsy, the head has been crushed, and then drawn out. In *céphalotripsie répétée*, M. Pajot proposes to suppress the fourth operation (the extraction), the only one, in his opinion, which may be dangerous.

The "*céphalotripsie*," such as authors describe it, and such as is generally practiced, can be reduced to four operations. The head being emptied, after the perforation of the skull, either with the aid of Smellie's Scissors, or with M. Appolyte Blot's Perforator. The branches are introduced in the same manner as those of the forceps, with this difference only, that in the regular application in reference to the head, is useless, when even it would be possible, and often it is not so.—First operation. The head once seized, we join the handles, after being well assured that the parts of the patient are not included between the jaws of the *céphalotribe*.—Second operation. The blades are closed in turning the screw, and then the crushing operation of the bones is made.—Third operation. The fourth operation consists in making extraction by traction. This is, according to M. Pajot, the only dangerous time, for the splinters of bone pass out often from the inner part of the skull, and may tear the maternal parts. This M. Pajot avoids. The crushing done, it suffices to impress on the head a slight rotatory movement, after which he joins the branches and draws out the instrument, leaving the labor to nature, which often finishes the operation, since the volume is now considerably lessened. If this does not occur at the end of two or three hours, he introduces again the instrument, crushes it in another direction, and again draws it out, after impressing a rotatory movement, but without traction. It is the danger of

these possible lacerations by the bony splinters which, says M. Pajot, has rendered céphalotripsie as generally practised in contracted pelvis, as dangerous for the woman as the Cæsarian section. By the new method, we operate as many times as is necessary by crushing, and after each crushing wait. In the actual case, the first was done at four o'clock in the evening, the second at eight, the third at midnight. After the third, the head came without difficulty. But for the body, it was easy to understand that it would not come more easily than the head. M. Pajot sought an arm which was extracted, and then applied the instrument to the shoulders and body, which remained. A crushing was made, a movement of rotation impressed on the body, then the instrument drawn out, and they waited again. At five o'clock in the morning, the womb freed itself spontaneously of the fœtus. At this moment a grave complication was produced, which was not the fault of any one. The child had been dead three days, and the cord had hung out of the vulva, very much inconveniencing the previous operation. It was very friable. The woman placed in bed, we proceeded to the delivery of the placenta, but whatever the precautions used, the cord broke, and the placenta remained in the womb. It was an unfortunate situation. M. Pajot did not, however, despair. The womb had expelled the fœtus even easily enough, and as she had not been in labor more than forty-eight hours, we could hope in leaving the organ to work alone, it would end by disembarassing itself. M. Pajot opposed expressly the administration of ergot. During the day, the placenta came spontaneously.

From this moment all went well; the breasts swelled, which is a good sign; the patient could be taken home, and M. Pajot, who saw her on the 20th March, found her in a condition as favorable as possible. I am certain, added M. P., that twenty years ago the Cæsarian section would have been made on this woman. This is the fourth case which justifies me in the opinion already expressed many years since on this subject: "I will not decline (refuse) céphalotripsy to a woman except when it will be absolutely impossible to intro-

duce an instrument." But I must hasten to add that I have not the pretension to deliver with only one instrument or one operation, women who have pelves so excessively contracted. It is necessary, sometimes, to use many crushings, and in one case I had to repeat the operation as many as eight times. This case, remarked M. Pajot, will be the more interesting if it terminates in a cure. With a woman who has gone through such an operation, it is necessary to be very careful during a certain time. It may happen that, during eight, ten, or even fifteen days, all goes well, when we think we have obtained a cure, in twelve hours the patient sinks. In these cases, here is what occurs. The pressure exercised by the pressure of the foetal parts on the organs of the mother, causes partial mortification about the sacro vertebral angle. So long as the slough is not detached, there is nothing serious, but presently it is detached, a perforation is made, and a fatal peritonitis carries off the patient in a few hours.

We must, therefore, never promise a cure before the necessary time has elapsed for the alimentation of the eschar, if it exists. It is only at the end of sixteen or eighteen days that we can affirm that the patient is saved.

"En résumé, says M. Pajot, I am not in cases of this kind of the opinion of every body.

"In the best authors, you will find that below six and a-half centi-metres ($2\frac{1}{4}$ in.) there remains only the Cæsarian operation to propose to the woman; my limit is the size of the jaws of the céphalotribe.

"I say farther, should the pregnancy of a woman arrived at the eighth month, be entrusted to me, who had only four centi-metres (2 in.), or only three centi-metres (1.5-8 in.) diameter antero posterior, I would not yet despair. I would make an instrument in proportion, and reduce the child to a pulp, in order to make it pass through such a narrow channel."

The woman on whom the operation above described was performed, came to The Clinic this morning (3rd April) and M. Pajot exhibited her to the class, again repeating in substance what has been reported above by M. Fourcart for the

Moniteur des Sciences, and which I have translated for The Journal. She is pale and thin, but says she is rapidly getting her strength, and now suffers no inconvenience from her recent terrible delivery, except some irritability of the bladder, and this, she thinks, is growing better.

SELECTIONS.

- I. *Observations on some of the Daily Changes of the Urine.*
By WM. ROBERTS, M. D., Physician to the Manchester Royal Infirmary. (Continued from p. 395.)

4. *The Re-action of the Urine.*—The well-known researches of Dr. Bence Jones on the acidity of the urine, have, in this country, since 1849, greatly modified the old opinion, that the re-action of healthy urine was necessarily acid. He propounded the hypothesis that the stomach and kidneys were, as to their re-action, in a state of antagonistic correspondence. When the former was empty, its lining membrane was neutral, or sometimes even faintly alkaline; and at this time the urine was strongly acid. On the other hand, when the stomach became charged with the sour gastric juice for the digestion of the food, the urine then became less acid, or changed to alkaline; when digestion was completed, the gastric acid re-passed into the blood with the chyle, and restored the acidity of the urine. The multiplied facts on which the conclusions of fact rested, and the admirable theory by which they were harmonized, procured for both a ready acceptance among Dr. Jones' countrymen; and his teaching came to be regarded as an established physiological doctrine. Time, however, did not improve the position of the new doctrine. On the contrary, the experience of observers in this country and in Germany tended to re-establish the old opinion, that the healthy urine was invariably acid, except from the effect of caustic or carbonated alkalies, or the salts of the vegetable acids, which were broken up in the blood and appeared in the urine as carbonates.

Dr. Beneke found in his own case, that although the urine was examined on twenty-three days, he could not discover any depression of the acidity as caused by food. He records, in addition, not less than a hundred day-observations on different sick and healthy persons with this result, that although the urine did occasionally show a depressed acidity, and even an alkaline state, after a meal, and especially after breakfast, yet this was very far from being constantly the case.

Dr. Julius Vogel also found that observations made partly by himself, and partly by pupils under his direction, did not yield support to the views of Dr. Jones. These results, he states, "showed uniformly that the greatest quantity of acid secreted per hour by the kidneys occurred during the night, the least in the forenoon, while a medium quantity was discharged in the afternoon after the principal meal. These results are therefore unfavorable to the conclusions of Dr. Bence Jones, but do not tell conclusively against them, inasmuch as other circumstances may have had an influence on the amount of acidity."

Dr. Sellar states, that in a good many trials he has not been able to satisfy himself "that the rule, as laid down by Dr. B. Jones, is generably applicable in Edinburgh; certainly not to the extent that the urine loses entirely its acid character, or that it becomes alkaline." Nevertheless, it has seemed to him "that the variations in the degree of its acidity are in some measure governed by the existing state of the stomach."

It seemed, therefore, not undesirable, in the face of this contradictory testimony, to submit the question to a new investigation, and to inquire if means could not be found to reconcile the conflicting facts, and ascertain with some precision what effect food had on the re-action of the urine.

To this end the urine was examined at short intervals,—after a meal, usually every hour; and at periods more remote, every two hours. The hourly flow being thus ascertained, the absolute quantity of free acid discharged per hour was estimated by a test solution. Dr. B. Jones, in his experiments, was content to gauge the amount of acid in 1000 grains of the urine, without reference to quantity per hour; and it was therefore objected to them, that the varying concentration of the secretion, especially the great dilution which follows free potations, vitiated the conclusions deduced. The objection, however specious, lies with very little justice against these researches; for Dr. Jones was always careful to specify the density of every urine which he examined, and in this way to guard against any very great fallacy from unequal concentration. The method of hourly estimates has, however, unquestionably the

merit of superior exactness; hence it was adopted in the following observations.

The mode of proceeding was to heat five hundred grains of the urine, and to add gradually a dilute solution of caustic soda to saturation. If the urine became alkaline, dilute sulphuric acid was used in the same way to ascertain the degree of alkalescence. Both test solutions were made of equal saturating powers, each 100 grain-measures being equivalent to one grain of dried carbonate of soda. In this way the acidity or alkalinity per 1000 grains was ascertained; and from this, and the quantity of urine secreted during the hour, the hourly amount of free acid or free alkali discharged was computed.

The results of these experiments confirmed in the fullest manner the conclusions of Dr. Bence Jones, that a meal, be it of animal, vegetable, or mixed food, has a powerful and constant effect in lowering the acidity of the urine, frequently even rendering it alkaline.

The following table exhibits the results obtained with a *mixed diet*. The numbers indicate grains of dried carbonate of soda. There were but two meals taken each day; so that after dinner a long period of fasting ensued, until breakfast next morning. No alcoholic liquors were taken during the progress of these experiments. The days of the first set were not consecutive; whereas those of the second set (with one exception) were successive days. The plus sign is prefixed when the urine was acid, and the minus sign when it was alkaline: (See table marked I. at end of article.)

The mean results obtained on these eleven days are seen to be unequivocal in their affirmation of the power of mixed food to depress the acid re-action of the urine; and the one set is remarkably in agreement with the other. The urine became alkaline for about two hours after breakfast, and for about three hours after dinner. The several days differed a good deal from each other as to the intensity of the effect. The urine did not always change from acid to alkaline after a meal, but it invariably showed a greatly lowered acidity. Some of the causes which operate to produce these inequalities will be presently adverted to.

On some additional days four meals a day were taken, according to the usual mode of life of the subject of experiment, and malt liquor was taken with dinner and supper. This did not alter essentially the results obtained; but a modification was caused by the quick succession of the meals, for it was found that the *remote* effect of one meal interfered with the *immediate* effect of a succeeding one. Two sets of experiments were also made with a diet of purely *vegetable food*. In

the first of these, the days alternated with days on which animal food was used. The experiment, too, only embraced a portion of the twenty-four hours, namely, from 7 A. M., to 11 P. M. The second set embraced five complete days, of which three were consecutive; the other two succeeded to days of mixed diet, on which dinner had been taken at 2 P. M., after which no solid food was taken until breakfast next morning. It may be observed that a very considerable difference exists between the results of the two sets;—that on the days composing the first, the urine never became alkaline, at all and even the depression of the acidity was comparatively slight; whereas, on the days of the second set, vegetable food showed a very powerful influence over the urinary re-action. The articles of diet used were bread, sugar, coffee or tea, without cream, for breakfast; and bread, potatoes, rice and a vegetable soup for dinner. Occasionally carrots and celery were added. The following table shows the mean results for the two sets. It is constructed similarly to the previous one: (See table marked II. at end of article.)

There was a very considerable difference between the several days composing the second set. On the first day, although the acidity declined materially both after breakfast and after dinner, the urine did not become alkaline; while on the third day it was strongly alkaline after both meals.

In the last place, purely *animal food* was tried; and it was found most efficient in depressing the acid re-action of the urine. The following table includes two sets of experiments entirely parallel to the two on vegetable food; the first set not embracing the whole day, and consisting of days alternating with days of mixed or vegetable diet; the second set embraced the twenty-four hours, and three of the days were successive. The fare was composed variously. For breakfast, a mutton or pork chop, or a beef-steak and water; sometimes eggs and boiled milk, and once fried sole and milk. For dinner, roast fowl, partridge or hare, broiled salmon, oysters, beef-steak, mutton-chop, cheese and milk. (See table marked III. at end of article.)

I could not perceive any distinct difference in the effect of the diverse forms of animal diet; fish, flesh and fowl and game appeared to act with equal power.

The conclusion, then, to which these experiments lead, is that ordinary food, whether it was purely animal, purely vegetable, or, as is more usual, an admixture of the two, invariably caused a diminution of the free acid separated by the kidneys. This conclusion is the more remarkable, as it scarcely squares with what is known of the re-action of the urine in carnivorous

and herbivorous animals. In the former, the urine is described as always acid, and in the latter, as invariably alkaline; and the difference is attributed to diversity of food in the two classes. The experiments of Dr. Cl. Bernard seem conclusive on this point. He found that when rabbits (whose urine is normally alkaline) were fed for some time on an exclusively animal diet, they passed an acid urine, and that its alkalescence was not restored until a vegetable diet was substituted. Dogs, also, when restricted to a vegetable fare, secreted an alkaline urine, turbid from deposition of phosphates; but when restored to animal flesh, their urine resumed its natural clearness and acid re-action. How to reconcile these contradictions, I am unable to say; but it may be pointed out as worthy of notice, that of the three *consecutive* days of exclusively animal and exclusively vegetable diet, the greatest effect in the former was on the first day, and it fell progressively on the second and third days; whereas the exact reverse took place on the days of vegetable food.

Another point was brought out with great distinctness in these observations, namely, the falling off which takes place in the hourly amount of free acid after prolonged fasting, and the still greater falling off in the hours of sleep. But this second decline has a totally different origin and significance from the depression that follows a meal. The latter is a true *alkaline tide*, and if it but flows strongly enough, the urine altogether loses its acid re-action and becomes alkaline; but in the former case, the intensification of the phenomenon has no tendency to change the re-action of the urine, because it depends simply on the diminished secretion of solid urine, which, as we have already seen, invariably accompanies the state of fasting and sleep. That this is the true interpretation of the fact, may be seen by comparing the degree of acidity per 1,000 grains of liquid urine; or, still more exactly, by comparing the amount of free acid corresponding to 100 grains of solid urine with the amount separated per hour. It is then seen that the *degree of acidity* of the urine steadily rises, after recovery from the depression of the alkaline tide, until the next meal. In the subjoined table the urinary acid is computed in these three ways, namely: 1, per 1,000 grains of liquid urine; 2, according to the hourly quantity secreted; and 3, as a per centage on the solid urine. The time selected for comparison is after dinner on the seven days composing the second set on mixed diet. The urine had recovered its acidity at 7 o'clock P. M., on the subsidence of the alkaline tide; and we follow the oscillations of the free acid through hours of fasting and sleep, until 8 o'clock next morning.

Time of Day.	Per 1000 grs. of Liquid Urine.	Per Hour.	Per 100 grains of solid Urine.
7-9 P. M.	0.55	0.48	1.02
9-11 ..	0.66	0.77	2.02
11-1 P. M.	1.07	0.62	2.13
1-3 ..	1.20	0.88	2.37
3-5 ..	1.55	0.45	2.50

The second and fourth columns conclusively show that the acidity of the urine becomes more and more intense as fasting is prolonged, and that the falling off in the third column (hourly amounts) is merely a consequence of diminished renal activity.

I was at first led into error by studying the oscillations of the free acid too exclusively from the hourly point of view. It appeared as if an *acid tide* followed immediately on the ebb of the *alkaline tide*: for the hourly secretion of acid was uniformly found at its highest shortly after the urine had recovered its acidity (see 3d column): but this was entirely due to the fact, that the increased activity of the kidneys, called forth by the meal, persisted for two or three hours after the normal acidity of the urine had been restored. There seems, however, a limit to the increase of the acidity in prolonged fasting: for Dr. B. Jones found, that continuing to fast for twelve hours beyond the usual time of taking food, did not intensify the acidity of the urine.

There is evidently the closest relation between the reaction of the urine and that of the blood. By adding to the alkalescence of the blood through artificial means, as by exhibiting caustic or carbonated alkalies, we are able to depress in a corresponding proportion the acidity of the urine. On the other hand, also, by exhibiting acid (although this seems less readily accomplished), we can similarly heighten the re-action. We may, therefore, look on the urine as a measure of the state of the blood. When the urine is highly acid, the alkalescence of the blood is below par; when, on the contrary, the urine is alkaline, it is an indication that the alkalescence of the blood is above par. It follows, therefore, that to the kidneys is delegated the important duty of regulating the re-action of the blood. When the blood tends to become too feebly alkaline, the kidneys separate acid largely; when, on the contrary, its alkalinity mounts beyond the physiological requirement, the same organs secrete a feebly acid, or even an alkaline urine.

The alkaline tide—and in this term I would include the whole period of depressed acidity, and not merely the time

during which the urine is actually alkaline—was found to set in earlier after breakfast than after dinner, and its duration was more brief. After breakfast the acidity showed nearly always a sensible declension in forty minutes. The urine, however, never became alkaline, nor even neutral, so soon. During the second hour after breakfast (from nine to ten) the alkaline tide usually culminated; but in about a third of the cases the point of least acidity was not reached until eleven o'clock. Then the tide turned, and from eleven to twelve the urine was found fast recovering its re-action, and about one the normal level was usually attained. Thus, for about four hours the morning meal exercised a depressing effect on the acidity of the urine; but it was not actually alkaline usually for more than an hour, sometimes for two hours, and once for three hours.

The effect of dinner was not perceptible until the second hour after the meal. During the next three hours (third, fourth and fifth hours) the alkaline tide ran in its greatest strength. On the third and fourth hours the urine was always (with two exceptions) found alkaline when the meal had been of mixed food or animal diet. At the end of the sixth hour the tide had generally turned, and the acid re-action been restored. Three hours was the usual duration of the alkalescent state after dinner; sometimes two hours, more rarely four hours, and on one occasion five hours. The amount of free alkali discharged after dinner was, generally, not far from double the quantity observed after breakfast; so that, in duration and intensity, the effect of dinner proved about twice as great as that of breakfast. The difference arose, probably, simply from the fact that breakfast was a much lighter meal than dinner, and its impression on the system consequently smaller.

The alkaline urine that was passed after food owed its re-action to a fixed alkali, and not to ammonia. It did not effervesce with acids.¹ It was rich in earthy and alkaline phosphates; and on these latter, in a basic state, depended apparently its alkaline re-action. As might have been anticipated, the loss of acidity entailed the precipitation of the earthy phosphates; and the urine, when passed, was frequently turbid. But this was not always so. Not unfrequently, especially after breakfast, the urine, although alkaline, retained its transparency. Generally, such a urine was of feeble alkalinity and dilute; but now and then it was observed to be tolerably concentrated,

¹ I did not try it when using the vegetable food only. Perhaps then it might have shown the presence of carbonates.

highly alkaline, and still clear. All transparent alkaline urines were rendered immediately turbid by caustic ammonia, and by mere heating; so that the transparency did not depend on the total absence of earthy phosphates. It was also found, that in the turbid urines, after subsidence of their deposits, caustic ammonia caused an additional precipitation.

The degree of turbidity varied from a barely perceptible cloudiness to a thick muddy opacity. The deposit subsided quickly, and left a clear, yellowish-amber supernatant liquor, often with a greenish tinge.

The odor of this alkaline urine resembled that of the fresh urine of the horse. It had lost the characteristic urinous odor, and exhaled a strong sweetish aroma, so peculiar as to indicate with certainty the change of re-action without the aid of test-paper.

Uric acid was abundantly present in it. On seven successive days comparison was made of the amount of uric acid secreted during the alkaline tide with the quantity secreted on the recovery of the acid re-action, and again passed during the hours of sleep. The following table shows the results obtained as computed in three ways,—namely, 1. the amount per 1000 grains of liquid urine; 2. the amount per hour; and 3. the per-centage on the solid urine:

Time of day.	Uric Acid, per 1000 grains of Liquid Urine.	Uric Acid per hour.	Uric Acid, per 100 grains of Solid Urine.
4- 7 P. M., alkaline tide.	0.40 grains.	0.36 grains.	0.83 grains.
9-11 " acidity restored,	0.18 "	0.13 "	0.34 "
1- 7 A. M., urine of sleep.	0.39 "	0.10 "	0.60 "

The urine of the alkaline tide was, therefore, rich in uric acid (as calculated per 1,000); rather more so even than the night urine, which nearly always let fall a copious urate deposit on cooling. The hourly quantity was almost three times greater than during the succeeding period when the acidity was restored (from nine to eleven), and more than three times greater than during sleep. The differences are not so great when the uric acid is reckoned as a per centage on the solid urine; also here also the alkaline urine shows notably the highest proportion.

The remarkable poverty of the urine in uric acid from nine to eleven, was probably a direct result of the excessive separation during the preceding hours of the alkaline tide, the blood

having been thereby left poor in uric acid, and therefore unable to supply the kidneys with the usual quantity.

Although, as we have seen, the immediate effect of a meal was to depress the acidity of the urine, the *more remote consequence* was to uphold, and even to increase the acidity. This was seen most distinctly when comparison was made of the acidity of the urine on the mornings succeeding supperless nights, and mornings following a hearty supper. In the former case, the mean hourly rate of acid discharged between 7 and 8 A. M. was only 0.51; in the latter, it was 0.88, or nearly double. And not only was the hourly discharge thus increased, but even the degree of acidity per 1,000 showed a distinct exaltation—the mean numbers being, for the mornings after supperless nights, 1.83, and for mornings after a supper, 2.15. This latter reckoning, however, did not always exhibit results in accordance with this general mean, and exceptions occurred; but for the *hourly* reckoning all the separate results were consistent, sometimes in a greater, sometimes in a less degree, with the general mean.

The remote effect of animal diet appeared considerably greater than that of vegetable food. So that a highly animalized diet would seem to tend, in the long run, to heighten the acidity of the urine—a conclusion quite in harmony with ancient belief. Here, no doubt, lies the explanation of the otherwise puzzling difference between the effect of vegetable food in the first and in the second set of experiments on that diet. In the first set, the urine showed great unsusceptibility, not once losing its acid re-action, nor even reaching the neutral line; whereas, in the second set, it became alkaline, and even strongly alkaline, on several occasions. In the first, a diet rich in animal flesh had been used on the alternate days; and the remote effect of this evidently overpowered the immediate effect, that would otherwise have shown itself more prominently. This circumstance is of importance to bear in mind when the effect of food on the re-action of the urine is to be traced. A heavy supper the night before, especially a meat supper, will greatly diminish the effect of breakfast next morning. For this reason, it is well, in order to obtain distinct results, to fast for eight or ten hours, or more if night intervene, before taking the meal whose effect it is wished to observe.

It was a marked feature in these experiments, that although there was the greatest constancy and certainty in the successive changes of re-action, there were very considerable, indeed, the widest, differences in the *absolute amounts* of free acid or free alkali separated by the kidneys at corresponding hours

after a meal on different days. Whence these differences? This question may be conveniently considered in connection with another. Is the action of food, in lowering the acidity of the urine, a universal phenomenon? It is impossible to give a complete answer to this question until observations on separate individuals have been greatly multiplied; but the facts already known warrant the statement, that at least some healthy persons, whose urine otherwise appears perfectly normal, suffer constantly a diminished acidity of urine after meals, and often emit a urine which is alkaline and turbid, for four and six hours daily, without the least evidence of impaired function.

I am disposed to believe that the depression of the acidity of the urine after a meal is of universal occurrence; but at the same time observation has convinced me that there are very great differences in the degree or intensity of the phenomenon in different individuals. The source of these differences may be looked for in certain fixed peculiarities of constitution; and among these, the following may be indicated as probably operative to that effect:

1. *Differences in the Amount of the Insensible Perspiration.*—As the sweat is always acid, individuals with a moist, active skin would separate through this channel a large quantity of acid, and consequently leaves less for the kidneys to remove. In such persons, it might be expected that the alkaline tide would present more prominence than where the cutaneous surface was habitually dry and hard. Whether the sweat, under any circumstances, loses its acid character or not, I am unable to say; but I have invariably found it sour, even when the urine has been kept continuously alkaline by bicarbonate of potash for several weeks successively.¹

2. *The exaltation which takes place in the respiratory changes after a meal.*—The effect of an increased absorption of oxygen would be to increase the formation of acid. Those persons, therefore, in whom this exaltation takes place promptly after a meal, and is unusually great, would probably show but a feeble alkaline tide, because the acid-producing power of this excess of oxygen would counteract the opposing tendency of the meal.

3. *A power of quick digestion and absorption* would probably enhance the effect of a meal, inasmuch as the more

¹ Lehmann (*Physiological Chemistry*, vol. ii., p. 386) states that sweat which has been collected from the axillæ and feet is sometimes alkaline. I have never found test-paper put *on the skin* in those places fail to indicate an acid re-action; but I have witnessed the soaked shirt or sock, showing a faintly alkaline state. This was owing, however, I believe, to development of carbonate of ammonia in an originally acid perspiration.

suddenly a meal is thrown into the channels of the circulation, the greater the disturbance it would temporarily cause.

4. I am also of opinion that an over-worked or "below par" state of system is promotive of a diminished acidity of the urine; and that a high state of health and vigor tends to a heightened acidity.

In addition to these modifying conditions, which apply specially to different individuals, but also in a less degree to the same individual at different times, there are other circumstances which have a stronger bearing in the latter case. Of these, the most powerfully operative is the remote effect of a previous meal, which has already been fully considered. There is also the condition of exercise or rest. It is thought that, in a state of muscular activity, there is an increased production of the acid muscular juice; and this transuding into the blood, and passing through the kidneys, would, as Vogel surmises, probably intensify the acid re-action of the urine. And lastly, the richness or poverty of a meal in basic phosphates may, almost with certainty, be named as having great influence on the strength of the alkaline tide.

Some of these considerations have scarcely an intelligible force until the next inquiry is answered: *Why should a meal diminish the acidity of the urine?* And to the solving of this question our attention must now be turned.

Dr. Bence Jones' view has already been explained. The acid generated in the blood has become diverted to the stomach to digest the food; hence there is less—or none at all—to pass away by the urine. There are some difficulties, however, in the way of adopting this as the *sole* explanation of the diminished acidity of the urine after food; and another theory is here offered, based on totally different grounds, which appears to square better with the facts ascertained.

It seems from the observations of Dr. Beaumont on Alexis St. Martin, that the gastric juice required to digest a meal is poured into the stomach with great celerity; so that in twenty minutes, half an hour, or an hour at most, the whole quantity demanded is secreted, and no further flow takes place. Absorption then commences, and the acid begins to return with the chyle back again into the blood. If this be so, the re-action of the urine ought, on Dr. Jones' hypothesis, to reach the point of greatest depression in an hour or an hour and a half after a meal, instead of from two to five hours after. Moreover, how may it be explained, on this supposition, that the alkaline tide after dinner sets in an hour or an hour and a half later than after breakfast? Besides all this, the acid of the gastric juice and that of the urine are certainly not identical,

nor apparently even similar. These objections, however, although not without considerable force, would not suffice to upset a theory so plausible, were there not distinct reasons, and, as I believe, sufficient ones, to adopt an altogether different explanation, which I will proceed at once to lay before the reader.

We have seen that the alkaline tide coincided, in point of time, with the increase in the secretion of solid urine; may not the alkaline tide, therefore, be considered concomitant with the absorption of the meal into the blood, rather than with its digestion? But how can the passage of a meal into the blood affect the re-action of the urine? *By raising temporarily the alkalinity of the blood through the means of its mineral constituents.* The blood of all animals is alkaline; and Liebig informs us that this arises from the fact, that "all articles of food which alone, as bread and flesh, or when mixed with vegetables, are capable of sustaining the process of sanguification and nutrition, contain carbonic acid, or phosphoric acid and alkalis—the two latter in such proportion, that if we suppose them dissolved, the alkalis invariably predominate." Every meal, therefore, that is dissolved and absorbed into the blood, increases the alkaline re-action of that fluid, and raises it for a time above the natural level. But, as already explained, changes in the re-action of the blood are immediately reflected in the urine. A basic alkaline phosphate, or a carbonate artificially introduced into the blood, inevitably lowers the acidity of the urine, and, if in sufficient dose, renders it alkaline. What, then, is to hinder the carbonates and basic phosphates of our food from acting similarly? A meal, consequently, may be regarded from this point of view as a dose of alkali, which first exalts the alkalinity of the blood, and as a more remote, but equally certain consequence, diminishes the acidity of the urine.

In harmony with this explanation is the fact, already pointed out, that the increase of the solid urine (which is an index of food passing into the blood) takes place simultaneously with the declension of the urinary acid. It is true, that the subsidence of the alkaline tide is not synchronous with the completion of absorption; for the former begins to ebb while absorption (to judge by the quantity of solid urine) is still proceeding actively. This want of coincidence appears *primâ facie* to militate against the solution here offered; but it may be explained in two ways. Either it arises from the saline constituents being absorbed with more celerity than the rest of the food; or, more probably, it depends on the increased absorption of oxygen by respiration, already noticed as occur-

ring after a meal, which, after the lapse of five or six hours, by generating acid, counteracts the contrary effect of the food—in other words, from the remote effect of a meal overlapping the immediate effect.¹

When food devoid of mineral constituents was used, there was no lowering of the acidity of the urine. On two days sugar or honey was taken instead of ordinary food, and the acidity of the urine maintained itself almost unchanged, with a tendency to elevation rather than depression.

It must not be supposed, however, that the urine is never alkaline from fixed alkali, except as a consequence of taking food. Clinically, the urine is observed not very unfrequently in this condition. Dr. B. Jones has related such cases; and I have once and again met with them myself. In persons of a debilitated constitution, especially in the anæmic state which sometimes follows obstinate subacute rheumatism or gout, and in chlorotic females, I have seen the urine alkaline for a day or two, during the time of fasting. Next day, however, the urine would return to its natural state; reverting again, perhaps in the course of a week or ten days, to the alkaline state.²

According to Homolle and Duriau,³ the urine becomes alkaline by immersion of the body in a bath. It is even stated that the addition of nitric acid to the water does not prevent the urine of the bather from losing its acidity.

Finally, let us offer some considerations which may explain why the alkaline urine of food is not oftener met with in actual experience; and why there should exist such important discrepancies between the different observations made in relation to it.

The great source of fallacy is neglecting to isolate the product of the alkaline tide from the acid urine secreted before and after its flow. To do this, it is necessary to empty the bladder at the commencement and at the close of the period during which the urine is alkaline; and from the uncertainty of the time after a meal at which the point of greatest depression is reached, this can only be accomplished by examining the urine at hourly intervals. This is the reason, I apprehend, why the observations of Beneke and Vogel, and probably also

¹ A fuller account of the grounds on which this theory rests appears in a paper by the Author in the *Memoirs of the Literary and Philosophical Society of Manchester* for 1859.

² Dr. B. Jones informs me that in cases of chronic vomiting, whether from cancer of the stomach or *sarcina ventriculi*, the urine loses its acid re-action when the vomiting becomes frequent and excessive.

³ See a paper by Duriau in the *Archives Générales*, T. ii., 1856. The alkaline urine witnessed in the bathers at Vichy, has, if this be true, nothing to do with the alkaline state of the water, and is merely the effect of immersion.

those of Dr. Sellers, are at variance with those of Dr. Jones and myself.

In Dr. Beneke's experiments, the bladder was not emptied oftener than about five times a day; and by comparing the times of the meals with the times of micturition, it is evident that it was impossible for him to obtain results other than nugatory. The urines which he examined were mixed urines, and he did not in any wise isolate the secretion at the critical periods.

The same objection appears to lie even more strongly against the observations made under the supervision of Vogel. The urines were collected for three periods, namely, between breakfast and dinner (morning urine); between dinner and evening (afternoon urine); and during the hours of the night. All such urines would be acid mixtures; but it by no means follows that they did not mask an alkaline state, even it may have been, of some hours' duration.

Nothing could more strongly prove the importance of frequent examination of the urine, than the fact that the subject of these experiments was not in the least suspected to void at any time an alkaline urine until the urinary product was, as it were, analyzed by hourly examinations; and this although the urine had been under observation for years. And it took me by surprise to find the phenomena of the alkaline tide so strongly and so remarkably pronounced, after such long and effectual concealment.

5. *The Appearance of the Urine.*—Dr. Prout tells us "that in a perfectly healthy condition of the urine, this secretion not only remains transparent after cooling, but continues transparent until it begins to suffer those spontaneous changes incidental to all fluids containing organized matters in solution." This is a much too absolute statement even for the urine of ordinary micturition, and is certainly quite erroneous in relation to the urine as it leaves the kidneys.

The highly acid and concentrated secretion which is separated after six or eight hours' fasting, may be *expected* to let fall a deposit of amorphous urate on standing a while. I found the urine secreted between seven and eight in the morning (before breakfast), *nearly invariably*, to become sedimentary on standing a few hours; and usually even on mere cooling. I cannot, therefore, subscribe to the doctrine that the occurrence of a urate deposit *necessarily* indicates some departure from the healthy state. A low temperature, with a concentrated and highly acid state of the urine, are of themselves sufficient to throw down the urates. I have never witnessed a urine turbid from urates *when passed*. Dr. Prout states, that in gouty persons he has observed such urine; at the same, he sig-

nalizes the extreme rarity of such a condition. Dr. Thudichum relates a most singular example. A child suffering from fever had retention of urine; and when the urine was withdrawn by the catheter, it was found loaded with a lumpy deposit of urate of soda.

Like Dr. B. Jones, I found that the occurrence of a urate deposit on cooling was by no means a sign of excessive discharge of uric acid; on the contrary, the urine of the alkaline tide (which never deposited urates) was found to be in every respect richer in uric acid.

An alkaline urine depositing earthy phosphates is always turbid *when passed*; cooling does not increase the sediment; indeed, I have thought that a very slight cloudiness from this cause has disappeared on cooling, and left the urine transparent. At first, it might seem that the presence of urine containing suspended flakes of earthy phosphates in the urinary passages, would lead inevitably to the formation of concretions either in the renal tubuli or in the bladder; but it is notorious that the primary formation of a spontaneously-arising urinary concretion never is phosphatic, but nearly always composed of uric acid or oxalate of lime. And I am disposed to believe, rather, that the occurrence of an alkaline tide after meals is an admirable provision of nature for diminishing the risk of calculous formation.

After long fasting, and during the night, the secretion that flows through the kidneys is very acid and very concentrated—in a condition most favorable to the precipitation of crystals of uric acid or oxalate of lime; but if any such fall, they are dissolved and washed away by the alkaline tide after breakfast or dinner. The earthy phosphate deposit has itself no tendency to aggregate in masses, nor to adhere to any foreign body. When, however, ammonia begins to be developed in the urine, crystals are formed, and the deposit shows strong tendency to run into masses or small concretions. This deposit, therefore, as long as it is free from ammonia—and it is free from ammonia, as it appears, in the alkaline tide after meals—can safely pass through the urinary passages without fear of its forming a calculus.

The color of the urine was found to vary chiefly in degree; and, for the most part, simply from greater or less concentration. The night urine, however, was always noted as having a reddish tinge, and the urine of the alkaline tide had often an olive cast.

Healthy urines seem divisible into two distinct classes—1. *Urines of Fasting* (*urinæ sanguinis*), and 2. *Urines of Food* (*urinæ cibi*). The former are highly acid, inclined to deposit

urates on cooling, but always clear on passing; apt, also, to be high colored, especially during sleep. Estimated according to the amount of solid constituents discharged per hour, they are scanty. The urines of food fall into two well-marked varieties—those with a *diminished acidity*, and those with a *restored acidity*. Both varieties are of weak acidity, and abundant in quantity. They show no tendency to deposit urates on cooling, although they are rich in uric acid. They are rich in earthy and alkaline phosphates also; and the alkaline variety is usually turbid when passed.

Either class may be watery or concentrated, according to the relation between potation and the requirements of the system as respects water. The *urinæ potus*, therefore, do not merit to be regarded as a distinct class.

Very frequently the urine filtering through the kidneys is of a transitional character, as urine of one class or variety passes into another. The urine of micturition almost always belongs exclusively to no division, but is a mixture of several kinds; hence it scarcely ever presents, in well-marked degree, the special features of the urine of fasting or of the urine of food. Perhaps, if this classification of urines were kept more in view, the method of estimating the solid constituents from the density would yield more accurate results.

TABLE I.

ORDINARY MIXED FOOD.					
Time of Day.	First Set.		Second Set.		
	Mean of 4 Days. Breakfast at 8. Dinner at 4.		Mean of 7 Days. Breakfast at 8. Dinner at 2.		
	Free Acid or Alkali discharged per hour.	Remarks.	Free Acid or Alkali discharged per hour.	Remarks.	
7- 8 A. M.	+ 0.83	Breakfast at 8.	+ 0.52	Breakfast at 8.	
8- 9 ...	+ 0.66		+ 0.47		
9-10 ...	- 0.60		- 0.47		
10-11 ...	- 0.36		- 0.14		
11-12 ...	+ 0.11	{ Three times acid, once faintly alkaline.	+ 0.47	{ Five times acid, twice neutral.	
12- 1 P. M.	+ 0.35		} + 0.75		
1- 2 ...	+ 0.62				
2- 3 ...	+ 0.64		Dinner at 4.	+ 0.72	Dinner at 2.
3- 4 ...	+ 0.77	+ 0.05		{ Three times acid, once neutral and twice alkaline.	
4- 5 ...	+ 0.58	- 1.19			{ Six times alkaline, once acid.
5- 6 ...	- 0.04	- 1.21				{ Six times alkaline, once acid.
6- 7 ...	- 1.00	- 1.18		{ Six times alkaline, once neutral.	
7- 8 ...	- 0.87	Do.	} + 0.48		
8- 9 ...	- 0.60	Do.			
9-10 ...	0.10	{ Once neutral, once alkaline, twice acid.	+ 0.77		
10-11 ...	+ 1.06		} + 0.62		
11-12 ...	+ 1.11				
12- 1 A. M.	+ 0.89	Asleep.		+ 0.38	Asleep.
1- 7 ...	+ 0.74		+ 0.45		
7- 8 ...	+ 0.59				

TABLE II.

PURELY VEGETABLE FOOD.				
Time of Day.	First Set.		Second Set.	
	Mean of 4 Days, not consecutive. Breakfast at 8. Dinner at 4 P. M.		Mean of 5 Days, of which three were consecutive, and all were unpreceded by Supper. Breakfast at 8 Dinner at 2 P. M.	
	Free Acid or Alkali discharged per hour.	Remarks.	Free Acid or Alkali discharged per hour.	Remarks.
7- 8 A. M.	<i>plus</i> 1.20	Breakfast at 8.	<i>plus</i> 0.52	Breakfast at 8.
8- 9 ...	<i>plus</i> 1.35		<i>plus</i> 0.65	{ Twice alkaline, once neutral, and once acid.
9-10 ...	<i>plus</i> 1.14		— 0.25 ¹	
10-11 ...	<i>plus</i> 1.00		<i>plus</i> 0.60	
11-12 ...	<i>plus</i> 1.19		<i>plus</i> 1.04	
12- 2 P. M.	<i>plus</i> 1.32	Dinner at 4.	<i>plus</i> 1.09	Dinner at 2.
2- 4 ...	<i>plus</i> 1.30		<i>plus</i> 0.79	{ Four times acid, and once alkaline.
4- 5 ...	<i>plus</i> 1.29		} — 0.23	{ Three times acid, and twice alkaline
5- 6 ...	<i>plus</i> 1.12			
6- 7 ...	<i>plus</i> 0.79		<i>plus</i> 0.18	
7- 8 ...	<i>plus</i> 0.57		} 0.92	Asleep.
8- 9 ...	<i>plus</i> 1.44		<i>plus</i> 0.92	
9-11 ...	<i>plus</i> 1.45		<i>plus</i> 0.69	
11- 1 A. M.			<i>plus</i> 0.43	
1- 7 ...			<i>plus</i> 0.42	
7- 8 ...				

¹ Some embarrassment was found, in constructing these tables, as to how to proceed in taking the mean numbers for those hours (from 9 to 10 A. M., and 4 to 6 P. M.) on which the urine had an acid re-action on one or two days, and an alkaline re-action on the other days. The plan adopted was to subtract the whole of the acid from the whole of the alkali, or *vice versa*, according as the one or the other preponderated, and to divide the remainder by the total number of days. This mode of computing, although very convenient in

TABLE III.

PURELY ANIMAL FOOD.				
Time of Day.	First Set.		Second Set.	
	Mean of 4 Days, not consecutive. Breakfast at 8. Dinner at 4.		Mean of 4 Days, three of which were consecutive. Breakfast at 8. Dinner at 2.	
	Free Acid or Alkali discharged per hour.	Remarks.	Free Acid or Alkali discharged per hour.	Remarks.
7- 8 A. M.	<i>plus</i> 0.88	Breakfast at 8.	<i>plus</i> 0.62	Breakfast at 8.
8- 9 ...	<i>plus</i> 0.84		<i>plus</i> 0.82	
9-10 ...	<i>plus</i> 0.89	{ Twice acid, twice alkaline. Three times faintly acid, once alkaline.	— 0.05	{ Twice neutral, once acid, and once alkaline. Twice acid, once neutral, and once alkaline.
10-11 ...	<i>plus</i> 0.15		<i>plus</i> 0.12	
11-12 ...	<i>plus</i> 0.81		<i>plus</i> 0.92	
12- 2 P. M.	<i>plus</i> 1.29		<i>plus</i> 1.26	
2- 4 ...	<i>plus</i> 1.45	Dinner at 4.	<i>plus</i> 1.25	Dinner at 2.
4- 5 ...	<i>plus</i> 1.01		{ — 0.58		Alkaline each day.
5- 6 ...	<i>plus</i> 0.53			
6- 7 ...	— 0.90	Alkaline each day.	— 0.10	{ Twice acid, and twice alkaline.
7- 9 ...	— 0.09	{ Twice alkaline, and once acid.	<i>plus</i> 0.96	
9-11 ...	<i>plus</i> 0.74		<i>plus</i> 1.11	
11- 1 A. M.			<i>plus</i> 0.91	
1- 7 ...			<i>plus</i> 0.64	
7- 8 ...			<i>plus</i> 0.77	Asleep.

other respects, has the disadvantage of completely concealing the real numbers obtained on the several days. For example, the period from 4 to 6 P. M., which in the table indicates an hourly amount of free alkali equivalent to 0.23 grains of carbonate of soda, showed on two days a very high alkalinity, to the extent of 0.81 grains for one of them, and 1.47 grains for the other. But, as the urine was acid on the three other days, the average for the five days was thus reduced to 0.23 grains.

BIBLIOGRAPHICAL RECORD.

I.—*Clinical Lectures on Certain Acute Diseases.* By ROBERT BENTLEY TODD, M. D., F. R. S. Philadelphia: Blanchard & Lea. 1860. Pp. 308, 8vo.

THIS work, the last contribution of Dr. Todd to the treasures of medical literature,—*extremum munus morientis*,—was completed only a few days before the end of its author's life, and was issued from the press between the time of his death and that of his burial.

It consists of fourteen lectures, which are devoted to the consideration of the clinical history and treatment of several highly important diseases.

The first, second and third are occupied with the subject of Acute Rheumatism; the fourth and fifth with Continued Fever; the sixth with Erysipelas; the seventh with a rare and hitherto undescribed Affection of the Fauces, probably Erysipelatous; the eighth with the Treatment of Acute Internal Inflammations; the ninth with Pyæmia; the tenth, eleventh, twelfth and thirteenth with Pneumonia; and the fourteenth with the Therapeutic Action of Alcohol.

The principal object of the author is,—as he states it,—to show that the ordinary so-called antiphlogistic treatment is unnecessary for the cure of acute internal inflammations; and that the supposed necessity for such treatment rested upon an untenable hypothesis respecting the nature of inflammation and of fevers, and cannot be regarded as a legitimate induction from accurately observed clinical facts.

This doctrine is earnestly and confidently inculcated throughout the whole work, and is uniformly applied as the leading principle in the treatment of all the various diseases which come in succession under the author's attention. Whether the

case be acute rheumatism, pneumonia, erysipelas, or continued fever, and however active the accompanying vascular excitement, the essential rule for its therapeutic management is, according to Dr. Todd, to forbear the employment of reducing or debilitating remedies, and to make early and vigorous application of stimulating and supporting means. Blood-letting must, under almost all circumstances, be avoided; alcohol must, under almost all circumstances, be administered. There is extreme danger from depression; there is little or no danger from excitement.

This peculiarity of the author's practice cannot be expressed more emphatically than in his own words:

"In the treatment of rheumatism, you will often find it useful, and always when there is a tendency to delirium, to give stimulants, such as brandy or wine. That bleeding in rheumatic fever is unnecessary, and that its omission diminishes, rather than increases, the tendency to certain internal inflammations, I am so convinced, that for several years I have not abstracted blood, in any way, in a single case of the disease. The treatment of rheumatic fever by the abstraction of blood, even in moderate quantity, appears to me to increase the danger of internal effusions into the pericardium and the pleura, and also into the synovial sacs of the joints. Under this treatment, we also meet with the most violent and troublesome cases of delirium, which, under other methods, either does not occur, or is developed in a form sufficiently easily controlled. I am very much disposed to believe that this treatment predisposes to pericarditis and endocarditis; and that, if these affections occur in a case in which venesection has been freely practised, they are much less tractable than when you have to deal with them in a patient who has not suffered from loss of blood."

In the treatment of continued fever and of erysipelas, the importance of an early resort to the employment of stimulating and supporting remedies is still more strongly urged:

"In cases of continued fever, *from the first moment of your attendance*, let it be your constant and anxious effort to uphold the vital power of your patient by nitrogenous food, given as broths, and carbonaceous food, selected from farinaceous substances, and from alcoholic fluids, such as wine, brandy and other fermented liquors.

"Increasing delirium and coma are signs of increasing debility: both indicate the necessity of additional support."

"The upshot of all I have to tell you with respect to the treatment of erysipelas, is to give stimulants and nourishing food freely, and from the very commencement of the attack. Don't trouble yourselves with too much attention to the secretions, as some are apt to do. As soon as you are satisfied that the patient to whom you are called is laboring under erysipelas, at once begin to administer stimulants and nourishing food, using the precautions I have mentioned; and what I wish, above all things, to impress upon you is, that this stimulating treatment should be employed from the very beginning of the attack. Of all the stimulants, I believe the alcoholic are the best; and I have witnessed such remarkable effects, in such a variety of cases, produced by their free exhibition, that I am inclined to consider them as *antidotes* to the erysipelatous poison."

"Some attach great importance to the use of the tincture of sesquichloride of iron in this disease. I have no doubt many cases will get well under that drug, partly and mainly because it excludes depressing treatment, partly perhaps from some tonic power in the medicine; but I would as soon think of trusting to it in the treatment of severe cases, as I would to the billionth of a grain of aconite, or sulphur, or any other homœopathic absurdity. The remedy, so far as I know, is unobjectionable in itself, but its power to do good is small; and if you try it, let me advise you not to trust to it alone, but merely to use it as an adjunct to the treatment which I have endeavored to impress upon you."

"There is no disease in which one may dogmatize so decidedly as regards the beneficial action of alcohol as in erysipelas. Often, indeed, it appears to me to act as a direct antidote to the erysipelatous poison; for you will find that when administered *early* and steadily, not only does the malady yield readily, but those formations of pus (secondary abscesses), which, under other plans of treatment, are of so frequent occurrence in this disease, hardly ever make their appearance."

The method of treating pneumonia recommended by Dr. Todd is essentially the same as the one so zealously promulgated by Dr. J. Hughes Bennett—a coincidence, by the way, which we are a little surprised to observe is not referred to in the present volume.

"In all cases of pneumonia, whether sthenic or asthenic, a

very decided direct antiphlogistic treatment is hazardous,—in some extremely so,—and in none is it absolutely necessary; but in others there is no safety for the patient, unless the treatment from the beginning be of a direct stimulating and supporting nature.

“In cases of an average degree of severity, and by no means belonging to what is commonly called the asthenic or typhoid kind, the treatment consists in free counter-irritation by the application to the back and side, over the region of dullness, of flannels soaked in warm spirits of turpentine, which are kept on for half an hour. The stupes are applied at three several periods of the day, for the first three or four days. They excite considerable irritation and redness of the skin. A diaphoretic medicine is also administered, consisting chiefly of the liquor ammoniæ citratis, of which as much as six drachms are given every three or four hours; an occasional dose of a mild aperient medicine is given, and, for food, the patient is allowed at least a pint of beef tea daily, with milk and bread.

“In all cases, I am careful to give support for the first in the shape of animal broths, in small quantities, at short intervals; and in most cases I give wine and brandy early in a similar way, the dose being apportioned to the degree of depression of the nervous system.

“The plan of treatment which I have pursued consists, not in the use of remedies directly antiphlogistic (so-called), but in the employment of means which will promote the free exercise of certain excretory functions, by which the blood may be purified, and certain matters removed from the system, which, remaining in it, tend to keep up a state very favorable to inflammatory affections. The remedies to which I refer tend to promote the free action of the skin and of the kidneys, and, in a less degree, that of the intestinal mucous membrane; whilst, at the same time, a free stimulation is maintained of that part of the skin which is near the seat of the pulmonary inflammation; and an essential part of this treatment is, that while these remedies are being used, we do not aim at reducing the general powers of the system, but rather at upholding them by such frequent supplies of nourishment, easy of assimilation, as may be readily appropriated and duly apportioned, both in quality and quantity, to supply the waste, which, during the inflammatory process, must necessarily take place in the most important tissues of the body, especially the muscular and nervous.

“By following the plan I have laid before you, if the patient dies, it will be rather from a negation of treatment than from any other cause: the treatment will prove unsuccessful, simply because the disease went on unchecked by it; and in such cases

it is often a question if, by any known plan of treatment, such a result could have been averted."

Dr. Todd rejects the hypothesis, offered by Dr. Watson and others, that the type of disease has undergone of late years a material change, and has assumed a much lower grade than formerly as regards vital power, owing either to some alteration in the human constitution, or to some atmospheric modification. He doubts whether disease is of a lower type now than it was thirty or forty years ago; and he ventures the suggestion, that the time is not far distant when all who practice medicine in a scientific spirit, and divested of the trammels of routine, will discard the distinction of acute inflammations, and of acute disease in general, into *asthenic* and *sthenic*,—that all these maladies will be regarded as more or less *asthenic*, and that in their treatment an object of primary importance will be the early adoption of means to uphold vital power.

Such are some of the most remarkable of the therapeutic doctrines which occur in this volume. Respecting their value, there will be, of course, a diversity of sentiments. Very widely different will be the estimate of them formed by the admirers of novelty on the one hand, and by the advocates of authority and established usage on the other,—by the young, ardent and inexperienced, who are inclined to view all changes as improvements, and by the old and cautious, who are devoted to existing opinions and practices, and find rest for their souls by standing in the ancient pathways. By one of these classes Dr. Todd will be ranked among the most luminous philosophers, by the other among the most dangerous heresiarchs, of modern medicine.

For our own part, as we enjoy the advantage of being neither old nor young, but are "*nel mezzo del cammin di nostra vita*," and, consequently, exempt from the prejudices common to inquirers, who border too closely upon either extremity of human life, we are disposed to embrace a more moderate view in relation both to his merits and deficiencies. We find many things in his book which are valuable,—many things which are clearly and agreeably taught, and which the

reader will be benefited by knowing. We find every where the manifestation of candor and good faith. But we must confess that we have failed to discover much that seems new or original. The topic in the work which will attract most attention is the treatment of inflammatory diseases; but even on this subject all, or nearly all, the views expressed by Dr. Todd—whoever may be entitled to the dubious honor of their parentage—had been previously made familiar to the profession by the writings of Dr. Hughes Bennett.

Are these views correct? Is it expedient, safe and wise to attempt to subdue acute sthenic inflammation without resorting to the remedies,—blood-letting, antimony, mercury and low diet,—which have heretofore commanded the confidence of physicians?

It is not our purpose to enter upon any full discussion of this question. The subject has been sufficiently ventilated in the numerous replies which have been given to the arguments of Dr. Bennett. We shall content ourselves, on the present occasion, with remarking that the mode of treatment recommended by Drs. Bennett and Todd is, in our judgment, neither deduced from a just understanding of the nature of inflammation and of the action of remedies, nor supported by a sufficient basis of accurate observation and experiment.

The reasons urged in favor of the new practice appear to have but little plausibility. They appear also to have been fairly and satisfactorily confuted.

It is contended by the advocates of this practice, that when inflammation has commenced it must necessarily,—like the exanthematous fevers and some other diseases,—run on through a regular course, from which it is unsafe for the physician to attempt to divert it. To this, the reply is obvious. The dogma is a mere assumption, and an assumption directly opposed to abundant and decisive experience. Experience proves that inflammatory diseases are occasionally cut short during their early stage by the judicious use of blood-letting and other depletory and sedative means. Experience proves also that where such means fail—as they frequently do—to accom-

plish the immediate arrest of inflammation, they yet very commonly so modify and mitigate the inflammatory action as to diminish in a marked degree the danger of injurious and fatal results.

It is asserted that blood-letting and other similar means are useless against inflammation, because they are incapable of effecting the removal of the effused products of that process. To this, it may be justly replied, in the first place, that these means are employed in the hope, and for the purpose, of preventing the occurrence of such products; and, secondly, that when exudation has already taken place, its removal, we have good reason to believe, may be materially promoted by the action of such remedies.

It is objected against venesection, that its tendency is to do mischief by producing an impoverished and watery state of the blood. The reply is, that this measure, however injurious it may be, can never, when employed with ordinary discretion, be productive of such fatal evils as often result from the unchecked progress of inflammation. Spanæmia is, we suppose, somewhat less dangerous than gangrene; and temporary debility is commonly considered preferable to death.

With regard to venesection as a remedy for inflammation, there exists among the disputants on this question less difference of opinion than would at first appear, or than some of themselves seem to have thought. Both Dr. Bennett and Dr. Todd, while strongly opposed in general to the employment of the lancet, admit that it may sometimes be used with advantage—as in some few cases of Pneumonia for the purpose of relieving extreme pain or dyspnœa. Now, this is all that Dr. Watson or most of the other vindicators of the old faith would demand. Dr. Watson strenuously insists on the necessity of general blood-letting in certain cases of pneumonia; but he adds, with candor that does him honor, “Years have passed by since I have met with any instance of this disease which has required phlebotomy, and I may say, much the same of inflammatory diseases in general.” We have no doubt that in many cases of pneumonia, and of various other inflammatory affections, venesection

tion may be safely omitted, and especially if local blood-letting and antimony are sufficiently employed. But we are as fully persuaded as we are of any truth whatever, that there are numerous instances in which, while venesection might be dispensed with, it would be exceedingly perilous to neglect the topical abstraction of blood and the use of the other means which constitute what is commonly reputed the proper antiphlogistic treatment. The withholding of such treatment would, we believe, be equivalent, in very many cases, to resigning the patient to death; and to employ in its stead stimulants and supporting means—beef-tea, opium and brandy—would serve only to increase the danger, to destroy all hope of escape, and to precipitate the fatal result.

But it will be said, and said justly, that questions in practical medicine are not to be decided by speculative reasoning, but must after all be referred to the arbitrament of the Supreme Court of Experience. It is said also—but as we believe, not justly—that in the present instance the award of that court has been pronounced in favor of the new practice.

We admit without demur the authority of the court, but deny that the cause has been fairly and sufficiently tried, and doubt the accuracy of the clerks by whom the decision has been reported.

The cause, we think, has not been fairly tried. The advocates of the new practice have too often depended upon contrasting its results with those of the antiphlogistic plan in cases where that plan has been applied without proper discrimination and judgment—where, for example, pneumonia has in all instances and under all circumstances, been treated by tartar emetic and calomel, and by copious and repeated venesection, *coup sur coup*, and where such remedies were used, not because required by the condition of the system, but simply because the name of the disease happened to be pneumonia. We readily admit that such treatment is as pernicious as it is irrational, and that it must certainly cause in many cases far more evil than would result from the use of globules of sugar of milk, or even from that of opium and brandy. But we

deny that this absurd mis-application of remedies is the just exponent or representative of the antiphlogistic treatment employed by the generality of intelligent and judicious physicians.

Again, the cause has not been sufficiently tried; at least, not sufficiently to justify the verdict which is claimed. Both Dr. Todd and Dr. Bennett refer, in proof of the superiority of their method of treating pneumonia, to the cases which they have witnessed in their respective hospitals. It is chiefly, if not exclusively, upon these cases that they rest the credit of their innovation. The number of the cases thus appealed to appears strangely and ludicrously small, when we consider for what purpose they are adduced. The object is to show that physicians, from the origin of medical science to the present day, have been wholly ignorant of the proper mode of treating inflammation, and have, for centuries, been employing a method of treatment the most unfit to afford relief, and the most certain to aggravate the violence and mortality of the disease. These are grievous charges, and such as, in common justice and modesty, should not be made unless supported by an ample array of facts—by “confirmation strong as Holy Writ.” What evidence of their truth is offered? *Heu, quam exiguum!* Dr. Bennett states that during the eight years immediately preceding the publication of his lectures, the total number of cases of pneumonia which he had treated in the wards of the Royal Infirmary was sixty-five! Eight cases and an eighth annually! Dr. Todd’s numerical return is still more remarkable. He had had, he tells us, under his care in the hospital, in the eighteen years from 1840 to 1859, seventy-eight cases—no enormous number—and even these not all managed according to the new and improved method. Those which occurred from 1840 to 1847, were subjected to the ordinary or reducing treatment. It was only upon their more fortunate successors—fifty-three in number—who were admitted from 1847 to 1859, that the new treatment was employed; not, however, in its utmost purity, for it is confessed that to some of them calomel was administered. Fifty-three cases in twelve years are equal to about four and a third each year. Such a number, we sub-

mit, would afford but frail support for almost any disputed doctrine in therapeutics. Such a number is surely insufficient to establish the safety and utility of a plan of treatment like the one under consideration, so important, so little favored by theoretic probability, and so directly opposed to the experience and conviction of almost all physicians in almost all ages.

The argument derived from *statistics* in favor of the stimulating and supporting treatment, may, perhaps, be considered weighty and conclusive by those who, though incapable of thinking, are yet able to count—who have added up the returns made by some single observer, and carefully withheld their attention from the reports of others. *Qui respiciunt ad pauca*, says Aristotle, *de facili pronunciant*. Statistics are, in questions of therapeutics, exceedingly unfaithful and treacherous witnesses. By a little address, they may easily be made to give testimony in favor of any opinion or any practice, however absurd. In regard to the various modes of treating pneumonia, what do they depose? When cross-examined, they confess that the same method of treating that disease has, in the hands of different physicians—and at different times in the hands of the same physician—led to widely different results. Dr. Bennett and Dr. Todd treated pneumonia on similar principles and by similar means. Dr. Bennett states that he lost but 3 cases in 65, that is, 1 in 21½. Dr. Todd admits the loss of 6 in 53, which is about 1 in 9. Laennec treated the disease by venesection and tartar emetic. In 1824, he lost 1 case in 28; in 1825, he lost 5 cases in 34—about 1 in 7. Grisolle, Trousseau, Thielman and Schmidt employed tartar emetic without bleeding, and lost respectively 1 case in 44, in 26, in 9½, and in 4½. Baumgartner and Varrentrapp depended on the inhalation of chloroform. The former lost 1 case in 10, the latter 1 in 23. Burkart treated 60 cases by bleeding, and among these there was only 1 death, and in that case there were tubercles. Dr. Todd employed depletion in 25 cases, and lost 1 in every 6. The cases treated by bleeding show, on a large scale, a mortality varying from 1 in 2 to 1 in 64. In the cases in which bleeding was abstained from, the deaths are reported

to have been from 1 in $2\frac{1}{2}$ to 1 in 90. Such responses prove the value of statistics, the infallibility of the oracle appealed to, and the wisdom of its votaries. They prove also—what required no such proof—that there must be other circumstances, besides the treatment employed, which modify and decide the progress and result of cases, and increase or diminish the mortality of the disease. Tables of statistics in which no respect is paid to such circumstances; in which no reference is made to the constitution, age, or sex of the patient, the stage of his disease, or the climate, or the season, or the epidemic tendency of the period; in which it is not stated whether the attack was primary or secondary, simple or complicated, sthenic or asthenic; in which a number of cases are grouped together which have little or nothing in common—except that, very unfortunately, they are all known by the same nosological appellation, and have, on that account, been treated alike—are of not the slightest value, and can furnish no aid whatsoever towards the support or the condemnation of any therapeutic measure.

Neither the arguments nor the facts alleged in favor of the new method of treating inflammatory diseases can, as we think, prove satisfactory to those who examine them with impartial judgment. We are not conscious of being unduly attached to the treatment at present in common use. That treatment, though of great and inestimable utility, is yet far from being so perfect as to be incapable of improvement. It has been often modified. It will admit, with benefit, of still further modifications. The spirit of the age we live in, full of enterprise, contemptuous of the past, intent on progress, eager for novelties, is exerting itself as strongly in medicine as in any other of the physical sciences. Changes in our antiphlogistic practice will doubtless be made; but to be salutary, those changes should be made in the way of reformation, not in that of revolution. The general experience of competent and able observers should not be precipitately set aside as wholly destitute of value. It is an ill method of improvement to correct existing errors by flying into others of an opposite character, but of

equal or greater magnitude. "*Dum vitant stulti vitia, in contraria currunt.*" It is ill logic to argue because venesection has been used sometimes unnecessarily and sometimes too freely, that therefore brandy should in all cases be substituted for the lancet. Folly it unquestionably is to adhere to abuses because they are generally received and have been long established; but it should be remembered that it is equal or worse folly to adopt opinions simply because they are new, and to make changes from the mere love of change, and without any certain or probable consequent advantage.

II. *A Guide to the Practical Study of Diseases of the Eye.*

With an Outline of their Medical and Operative Treatment.

By JAMES DIXON, F. R. C. S., Surgeon to the Royal London Ophthalmia Hospital, Moorfields, &c., &c. From the second London Edition. Philadelphia: Lindsay & Blackiston. 1860.

WE have looked over this book with much satisfaction, and we take pleasure in recommending it to the patronage of the profession at large. The general practitioner is too much disposed to neglect close attention to diseases of the eye, considering them as appropriately belonging to the oculist, but as a vast majority of these diseases, out of the large cities, fall under the care of the general practitioner, it is his duty to make himself master of them as far as possible. Mr. Dixon's work will give him valuable assistance. It covers the ground of ocular diseases and their treatment, medical and surgical, in a practical manner without undue prolixity, and yet with sufficient fullness to be clearly intelligible. It treats of the use and abuse of the ophthalmoscope; an instrument which must necessarily come into general use among all surgeons who desire to become properly acquainted with diseases of the inner structure of the eye. It teaches conservative principles,

and urges, at times, something akin to a "masterly inactivity," as opposed to methods of over active treatment, which undoubtedly have done their share of mischief in this, as in every other branch of the practice. Excessive depletion, and the injudicious use of caustics, are properly condemned.

Even in the violent forms of purulent ophthalmia, our author opposes large bleedings; and he brings his own experience to bear against them, and in favor of totally opposite principles of treatment. In this disease his favorite local applications are alum and the nitrate of silver, used alternately; and his constitutional remedies consist of a moderate aperient, followed by quinine, iron, hyoscyamus, a good diet, pure air, cleanliness, and mayhap, a moderate allowance of wine or beer.

In *chemosis*, he objects to scarifications, a "barbarous proceeding" that "one may hope, ere long, to see discarded from ophthalmic practice."

We do not mention these points to express a full concurrence with Mr. Dixon. In a late article in this Journal on *Oriental Ophthalmia*, Dr. W. M. Turner, of Petersburg, gives the following condensed summary of treatment adopted by Sichel and Desmarres, viz: After cauterization in the first stages, only, "*deep and repeated scarifications of the chemosis, astringent injections* freely administered, and *ice water* to the *lids*, where there exists *very much* inflammation. Leeches according to indications, and in general, depleting agents—sometimes anodynes—all, however, given according to indications and according to the peculiar constitution under treatment."

In regard to the scarifications, we entirely concur with the French surgeons; we have used them repeatedly, and always, we think, with good effect. We have not had sufficient experience in the formidable disease now under consideration, to judge between the great bleedings so generally recommended, and the tonic course directed by our author; but in this we are disposed to be guided by him. We would not readily, however, add *wine* and *beer* to our list of tonics in such cases. We think that they could only prove serviceable with a very

unpromising class of subjects; that is, with those whose previous bad habits render these artificial stimulants necessary to prevent total exhaustion. Mr. Dixon appears to us almost too ready to recommend them. After the operation for artificial pupil, he says: "It will often happen, where a little bleeding into the anterior chamber has taken place from the wound of the iris, that a glass of beer, or a glass or two of wine, taken with the meals, will greatly hasten the absorption of the effused blood." This statement scarcely admits of proof, and we freely declare that it does not command our confidence.

There is a trivial operation which may be performed on the eye, competent to give great relief, at least, which Mr. Dixon appears to ignore. In his chapter on *Abnormal States of Subconjunctival Tissue*, under the head of oedema, he speaks of the watery bladder which sometimes forms between the conjunctiva and sclerotic, overhanging and hiding the margins of the cornea. "From what we have said of the causes of this oedema, it follows that no special treatment is to be directed to it; but that it will subside when the pressure on the conjunctival veins is removed."

Now, *tapping* this bladder (which not only overhangs, but sometimes involves, the surface of the cornea by the passage of fluid under the delicate epithelial layer overlying the cornea,) is a practical operation competent to give great relief, which has been performed with the best results, and which ought to be done whenever the same condition of things calls for it.

Notwithstanding a few points of difference of opinion, we can safely recommend Mr. Dixon's work not only as a *guide*, but as a *trusty guide*, in ophthalmic practice. The publishers have done their part creditably, bringing out the work in a neat duodecimo of something upwards of 400 pages, in good, large type, and upon good paper. Altogether, its merits are such that it should have a place in every medical library.

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EDITORIAL.

VOLUME XIV.

We close the *fourteenth* volume of this Journal, and the first of the new series, under circumstances so cheering, as to make us look forward to our future labors with a confidence never felt before.

First. We may be permitted to hope that the volume now closing has received the approbation of our friends and the public. Its shortcomings of every kind are not so many as to hide the really valuable matter prepared by our collaborators, who, without reward, and often, at much cost of time and labor, have done so much to advance the interests of our enterprise.

Next. The present volume contains more *original matter*, than can be found probably in any journal in this country: whilst original translations and lectures have united to give to each issue more than accustomed interest. The future promises us great improvements in this respect, and our corps of active friends and contributors steadily increases. Can we refrain from thus publicly thanking them for their disinterested and truly valuable assistance?

Lastly. Our firm determination to refuse the Journal for the future to all delinquents, and the steady effort to reduce the circulation to a cash basis has given us the opportunity of testing the faithfulness of our subscribers, and we have reason to feel a great pleasure in the ready response made to our earnest appeals for prompt payments. Nor do we doubt that many who read these lines and who *know* how patiently their thoughtless procrastination has been borne, will send us by the earliest opportunity the amounts now due; and as an atonement for past derelictions, they might surprise our treasurer by a *payment in advance* for the coming volume.

With these few words of kindly greeting, mingled, it may be, with a side glance at the exhausted condition of the finances, which requires us to have an eye to business, and hoping that our kind friends will unite with us in our anticipations of future usefulness, and not forget to send us, *by next post, at our risk*, their subscriptions now over-due, we bid them for the present—Farewell.

SOUTHERN MEDICAL SCHOOLS.

Everything augurs well for the prosperity of the Medical Colleges of the Southern States, and we confidently expect that large and permanent accessions will be made to their classes during the approaching winter.

The University of Maryland has filled the vacancies in its Faculty with young and active men, and may anticipate the patronage of the entire State.

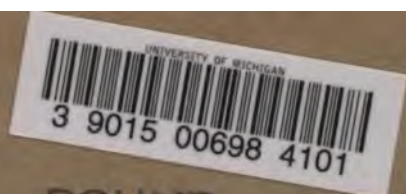
The Medical College of Virginia has been steadily gaining ground for several years, and will open the coming session with new apparatus and illustrations, a large, new and commodious Hospital attached to the Institution, affording to every student constant and ample facilities for the practical study of disease, while the opportunities for dissection are almost unequalled in this country. The wise liberality of the Virginia Legislature, in making to the College the handsome donation of *thirty thousand dollars*, will enable its Faculty to offer the students of Virginia and North Carolina every inducement to spend their period of study in the healthy and beautiful city of Richmond.

The Medical Schools still farther South are all feeling the influence of recent events, and it is evident that henceforth the Southern youth are determined to spend their time and money in fostering their own institutions. In South Carolina we are pleased to call especial attention to the large class of the past winter, at the Charleston School, numbering *two hundred and forty-nine students*, with a graduating class of *one hundred and fifteen*. The Georgia Schools are all improving; the New Orleans Schools can count in the aggregate nearly five hundred students; whilst the University of Nashville had not less than *four hundred and sixty* matriculates during the recent session.

The Medical Schools, North and South, must now enter upon a noble rivalry; each struggling to improve and adorn its system of teaching, and by inducing its pupils to aim at a higher standard of qualification, give assurance to the public that they are worthy of support. All future efforts to concentrate the youth of all sections at one or two points will be ineffectual, and an *equilibrium* will be produced which will give to each its regular and legitimate proportion.







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